Asbestos Characterization Report

Addendum to Building 123 Inspection

Rocky Flats Environmental Technology Site

Prepared by:

Scientific Ecology Group for

Rocky Mountain Remediation Services

Revision 1
June 6, 1997

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1.0 INTRODUCTION

During the week of April 7-11, 1997 Building 123 was inspected for the presence of asbestos containing building materials (ACBM). The purpose of this inspection was to prepare for the demolition of this structure. This inspection is to serve as an addendum to an inspection by Sitex performed in 1996. The previous inspection was evaluated for the purposes of facilitating the demolition process.

The addendum asbestos inspection and evaluation was conducted according to the guidelines set forth by the Asbestos Hazard Emergency Response Act (AHERA) and complies with the United States Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and State of Colorado regulations covering asbestos inspections.

The enclosed report contains the estimated quantities, physical assessment, location and descriptions of all materials either assumed or identified through sampling and analysis to be asbestos containing discovered during the evaluation. In addition to any added materials, this report contains estimated quantities of asbestos containing building materials for the structure. Please note that, as the building is decommissioned, decontaminated, and demolished, other suspect materials not accessible during this evaluation may require sampling.

2.0 ASBESTOS SURVEY

2.1 Evaluation Procedures

The process of evaluation of the Sitex report involved reviewing the report itself and verification of the data by visual inspection. The report was evaluated using two criteria: regulatory compliance and applicability and ability to facilitate the demolition of the structure. Since the report was designed to facilitate an Operations and Maintenance program, additional samples were necessary to protect the health and safety of the workers demolishing the structure.

2.2 Inspection Procedures

Bulk samples were acquired to determine the presence of asbestos in building materials. Suspect materials were chosen based on historical significance or on the judgement of the accredited inspector. Each sample was assigned an individual number made up of the building number, the date the sample was acquired, the initials of the sampling technician, and a three digit number in sequence. Quality Control samples are designated in the Bulk Sample Data Table as (QC).

A total of 29 samples were acquired from suspected materials. These materials included surfacing materials, thermal systems insulation, and miscellaneous materials. All samples were acquired in a random manner representative of the suspected material.

In addition to the bulk building materials samples, five "micro-vac" settled dust samples were acquired in the hallway above the suspended ceiling tiles. These samples were acquired from the tops of the flourescent light fixtures. Approximately 4 square inches of surface area was sampled. Locations were chosen randomly and distributed throughout the 121 and 164 halls in the facility. These samples in no way represent building materials and were acquired for the purposes of determining presence of asbestos in settled dust.

Analytical results indicate that there is no detectable asbestos present in the settled dust in the 121 hallway above the suspended ceiling.

All bulk samples were analyzed by Reservoirs Environmental Services, Inc. (RESI) of Denver, Colorado. RESI is accredited through the National Institute of Standards and Technology (NIST) and participates in the NIST National Voluntary Laboratory Accreditation Program (NVLAP) as required by the EPA. Bulk samples were analyzed by Polarized Light Microscopy (PLM) in compliance with guidelines established by the EPA 40 CFR 763, Subpart F, Appendix A. Asbestos concentrations were visually estimated and reported in percent by layer of each sample. Three samples required Point Count analysis to verify small percentages of asbestos present.

2.2 Description and Hazard Assessment of ACM (Addendum Only)

2.2.1 Cementitious "Transite" Board

Approximately 600 square feet of cementitious cabinet lining board, located in rooms 125 and 157.

Approximately 1000 square feet of cementitious board, located above the exterior windows in the older structure, excluding the south wing.

Approximately 600 square feet of cementitious board with narrow metal joints, located on the north wall of room 128A & B and the south wall of 127.

The EPA AHERA Hazard Assessment Category for the cementitious board is "miscellaneous material." The appropriate response action for this material is removal prior to demolition. Care must be exercised when working near this material so as to avoid damage.

2.2.2 Drywall, Tape, and Joint Compound

Approximately 4000 square feet of drywall, tape and joint compound. The drywall, tape and joint compound in the west hall 164 and the south wing offices and computer lab was sampled and analyzed for asbestos. PLM sample results indicate there is 3% asbestos in the joint compound. Point Counting results on this layer indicate detectable asbestos present in these materials in percentages from 2.5% down to .5%.

The EPA AHERA Hazard Assessment Category for the drywall, tape and joint compound is "miscellaneous material". The appropriate response action for this material is to monitor for disturbance during the demolition. Adequate wetting is required to avoid violation of clean air standards. Should workers require access to pipe insulation or other asbestos containing materials inside or behind this drywall, OSHA requires the joint compound be treated as a Class I abatement.

2.2.3 9" and 12" Floor Tile

Approximately 10,500 square feet of vinyl asbestos floor tile squares, located in various rooms and hallways throughout the facility, excepting the west wing hallway and major portions of the north wing south side rooms.

The EPA AHERA Hazard Assessment Category for the tiles is "miscellaneous material". The appropriate response action for this material is to maintain in a non-friable condition during the demolition activities, or to remove the tiles using appropriate work practices prior to demolition.

2.2.4 Grey Fibrous Duct Insulation

Approximately 100 square feet of grey fibrous paper duct insulation, held in place with poultry netting, located on the east wing roof of the 1968 addition.

The EPA AHERA Hazard Assessment Category for this material is "friable thermal systems insulation." The appropriate response action for the duct insulation is removal prior to demolition. Care should be exercised in the vicinity of this material as it has become friable and could be damaged easily.

2.2.5 Pipe Insulation, White Block

Approximately 10 feet of white block insulation, wrapped in tar paper and corrugated sheet metal on the steam tie-in on the east-central side of the building. At the time of inspection, this material was in good condition.

The EPA AHERA Hazard Assessment Category for the pipe insulation is "friable thermal systems insulation." The appropriate response action is to remove the insulation prior to demolition.

2.3 Description of Materials Testing Negative for Asbestos (Addendum Only)

2.3.2 Tan Rough Texture Exterior Stucco

The exterior rough texture stucco paint was sampled and analyzed for asbestos. The sample results indicate that there is no detectable asbestos present in this material.

2.3.3 Vapor Barrier Mastic on Pipes

The vapor barrier mastic on the pipe insulation in mechanical room 132 was sampled and analyzed for asbestos. The sample results indicate that there is no detectable asbestos in this material.

2.3.4 Wall Board With 1" Flat Metal Joints

The wall board with flat metal joints present in locations throughout the building was sampled and analyzed for asbestos.

The sample results indicate that there is no detectable asbestos in this material.

2.3.5 Ceiling Plaster

The ceiling plaster in room 113 was sampled and analyzed for asbestos. Sample results indicate that there is no detectable asbestos in this material.

2.3.6 White Insulation Block in Pipe Hanger Saddles

The white block insulation discovered in the pipe hanger saddles on the pipe insulation in the 121 hall, associated with the 1984 asbestos abatement that took place in the east-west hall, was sampled and analyzed for asbestos. Analytical results indicate that there is no detectable asbestos in this material.

3.0 SUMMARY OF ESTIMATED QUANTITIES OF ACBM

3.1 Thermal Systems Insulation

Approximately 900 linear feet of pipe insulation located throughout the facility, including above the suspended ceilings in halls and lab areas/offices, but excluding that found in rooms 155-163 and 164 hall.

3.2 Cementitious Wall Board

Approximately 13,450 square feet of cementitious wall board located throughout the facility, predominately the 167 and 166 halls and the hall-facing walls in the adjoining rooms. This material can also be found as panels above the exterior windows, except the south wing.

3.3 Drywall, Tape and Joint Compound

Approximately 4,000 square feet of drywall, tape and joint

compound located in the 164 hall and the offices and computer lab in the south wing.

3.4 Resilient Flooring

Approximately 10,600 square feet of 9" and 12" floor tile located throughout the facility, excepting the 167 hall. Approximately 2,600 square feet of this tile is installed under carpet.

3.5 Mastic Under Counter

Approximately 40 square feet of black mastic on the underside of the counter on the south side of room 156.

3.6 Grey Paper Duct Insulation

Approximately 100 square feet of grey paper duct insulation located on the roof of the 1968 east wing addition (south wing).

3.7 Cementitious Board in Chemical Fume Hoods and Cabinets

The chemical fume hoods located in the lab areas are lined with asbestos containing panel boards in rooms 125 (middle and south wall), and 127, (north wall). Approximately 300 square feet.

The cabinet doors are lined with cementitious board in room 103 (north wall center doors), 105 (west wall, left two under chemical hood), 125 (middle chemical hood) and 127 (north chemical hood cabinets and the center counter). Approximately 300 square feet.

3.8 White Block Pipe Insulation

Approximately 10 linear feet of white block "mag" insulation with corrugated sheet metal covering, located on the east side of the exterior of the building, associated with the steam tie-in for the building. This system enters the building at room 132, east side.

4.0 COST ESTIMATE ASSOCIATED WITH ABATEMENT

The cost associated with removal and disposal of the ACM's necessary to facilitate demolition is approximately $167,000.00. This estimate includes removal of insulation, wall board, drywall joint compound, floor tile, hood and cabinet liners and the counter mastic.

This estimate does not include site support and only reflects the abatement contractor's costs.

APPENDIX A

Statement of Certification

The asbestos building inspection addendum to the Sitex report performed on building **123** was performed in accordance with applicable regulations, and employed only EPA AHERA accredited personnel.

Inspector: Michael N. Schluterbusch

EPA Accreditation: [redacted]

State of Colorado Certification: [redacted]

I hereby attest and certify that I performed the asbestos building inspection addendum to the Sitex report on building **123** at Rocky Flats Environmental Technology Site

Signature: _____ Date: 4/23/97

Gobbell Hays Partners, Inc.

10500 East 54th Avenue, Suite "H", Denver, Colorado 80239
Ph. (303) 574-0082 - Fax (303) 574-0061

CERTIFIES THAT

MICHAEL N. SCHLUTERBUSCH

has successfully completed
The **EPA-APPROVED AHERA ASBESTOS COURSE** for Building Inspector
Refresher and has passed the required examination in that discipline.

This course is EPA-approved under Section 206 of the Toxic Substances Control Act (TSCA)
and meets the requirements of Colorado Regulation No. 8.

Course Date: 02/14/97
Exam Date: N/A
Certificate No: 0297BIRGHP22
Expires: 02/13/98

Peter D. Cappel - Director

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APPENDIX B

BULK SAMPLE DATA TABLE

Sample Number	Sample Description and Location	Lab Result PLM (PC)
123-970408-MS-001	Exterior surfacing texture, rough beige; from north wall, 11' west of NE entry, 5' from ground at base of window sill.	ND
123-970408-MS-002	Exterior surfacing texture, rough beige; from far west wall, 5th window from the SW corner, at base of window sill.	ND
123-970408-MS-003	Exterior surfacing texture, rough beige, with vapor barrier mastic; from south side of duct on far east side, 3' east of east wall, 1' from the base.	ND
123-970408-MS-004	Exterior surfacing texture, rough beige; from west wall of east wing 20' north of SE corner, 1' from the ground.	ND
123-970408-MS-005	Exterior surfacing texture, rough beige; from with vapor barrier mastic; from east side of duct on far east side, 3' north of the SE corner, bottom edge.	ND
123-970408-MS-006	Exterior surfacing texture, rough beige, with vapor barrier mastic; from duct on far east side, 3' east of wall, 2' from the base.	ND
123-970408-MS-007	Exterior surfacing texture, rough beige; from east side of east wing, 3 windows south of NE corner, 4' north of south corner of sill, 5' from the ground.	ND
123-970408-MS-008	Drywall, tape, and joint compound; from west hall (164) east wall, 11' south of 155 entry, 3' from the floor.	A: ND B: ND C: 3% (1.5%) D: ND

Sample Number	Sample Location and Description	Lab Result PLM (PC)
123-970408-MS-009	Drywall, tape, and joint compound; from west hall (164), south entry, at NW corner, 4' from floor.	A: ND B: ND C: 3% (0.5%) D: ND
123-970408-MS-010	Drywall, tape, and joint compound, from west hall (164), west wall, 2' south of 162 entry, 3' from the floor.	ND
123-970408-MS-011	Drywall, tape, and joint compound; from 121A hall, south wall, 15' west of east entry, 4' from the floor.	ND
123-970409-MS-012	TSI vapor barrier mastic; from room 132, heating water supply valve flange, 3' north of south wall, 6' north of south wall, 2' from the floor.	ND
123-970409-MS-013	Ceiling plaster with rough texture; from 113, near toilets, 1' east of west wall, 2' south of north wall.	ND
123-970409-MS-014	Ceiling plaster with rough texture; from 113, near sinks, 3' west of east wall, 6' north of south wall.	ND
123-970409-MS-015	Wall board, 2' x 7' panel with narrow metal joint; from room 128, north wall, 2' west of NE corner, 3' from the floor.	A: ND B: 20%
123-970409-MS-016	Drywall, tape, and joint compound; from room 165, east wall, at north edge of south window, 4' from the floor.	A: ND B: ND C: 3% (2.3%) D: ND
123-970409-MS-017	Drywall, tape, and joint compound; from room 146, east wall, 2' south of NE corner, 4' from the floor.	ND

Sample Number	Sample Location and Description	Lab Result PLM (PC)
123-970409-MS-018	Drywall, tape, and joint compound; from room 142, east wall, 2' south of door, 2' from the floor.	ND
123-970409-MS-019	Wall board with 1" metal joints, from 146 hall, 10' east of west entry, 2' from floor.	ND
123-970422-MS-020	Built up roofing: tar, felt and filler; from west wing, 20 ' east of west edge, 40' north of south edge.	ND
123-970422-MS-021	Built up roofing: tar, felt and filler; from north wing, 21' east of west edge, 40' north of south edge.	ND
123-970422-MS-022	Built up roofing: tar, felt and filler; from east wing, 23 ' west of east edge, 15' north of south parapet wall to new addition.	ND
123-970422-MS-023	Built up roofing, membrane over styrofoam over plywood over firberglass; from east wing , south addition, 23' west of east edge, 15 ' north of south parapet wall to newest addition.	ND
123-970422-MS-024	Insulation on duct on roof, black paper over fiberglass; from roof vent, 17' west of east edge, 15' north of south edge.	A: 40% B: ND
123-970507-MS-025	Window frame putty; from exterior, west wing, west wall, 2nd window north of SW corner, 2nd pane up from base, LL corner.	A: ND B: 3% B: (1.25%)
123-970507-MS-026	Window frame putty, from exterior, east wing, west wall, 2nd window south of NE corner, 3rd pane north of south corner.	A: ND B: 2% B: (1.5%)

123-970507-MS-027	Window frame putty, from exterior, south wing, south side of 2nd window east of SW corner.	A: ND B: 2% B: (0.5%)
123-970602-MS-028	White block insulation in pipe hanger saddles in east-west 121 hallway, from NE entry, 4' east of west wall, 4' south of north entry doors.	ND
123-970606-MS-029	White block pipe insulation on steam tie-in on east side exterior of building, entering room 132, 10' above grade, 1' east of east side of building.	40%
123-970602-MS-001	Settled dust "micro-vac" sample, from 121 hall, above suspended ceiling, from top of flourescent light fixture: at intresection of east N-S hall and south wing.	ND
123-970602-MS-002	Settled dust "micro-vac" sample, from 121 hall, above suspended ceiling, from top of flourescent light fixture: at entry to room 125.	ND
123-970602-MS-003	Settled dust "micro-vac" sample, from 121 hall, above suspended ceiling, from top of flourescent light fixture: dfdat NE entry, 5' south of vestibule doors.	ND
123-970602-MS-004	Settled dust "micro-vac" sample, from 121 hall, above suspended ceiling, from top of flourescent light fixture: at NW entry 10' east of vestubule doors.	ND
123-970602-MS-005	Settled dust "micro-vac" sample, from 164 hall, above suspended ceiling, from top of flourescent light fixture: at entry to 162.	ND

Note: ND means None Detected; TR means Trace; PLM means Polarized Light Microscopy; PC means Point Count.

APPENDIX C

APPENDIX D

APPENDIX D

SAMPLE PHOTO DATA CARD

BUILDING 123 ROOM 121A DATE 4/28/97

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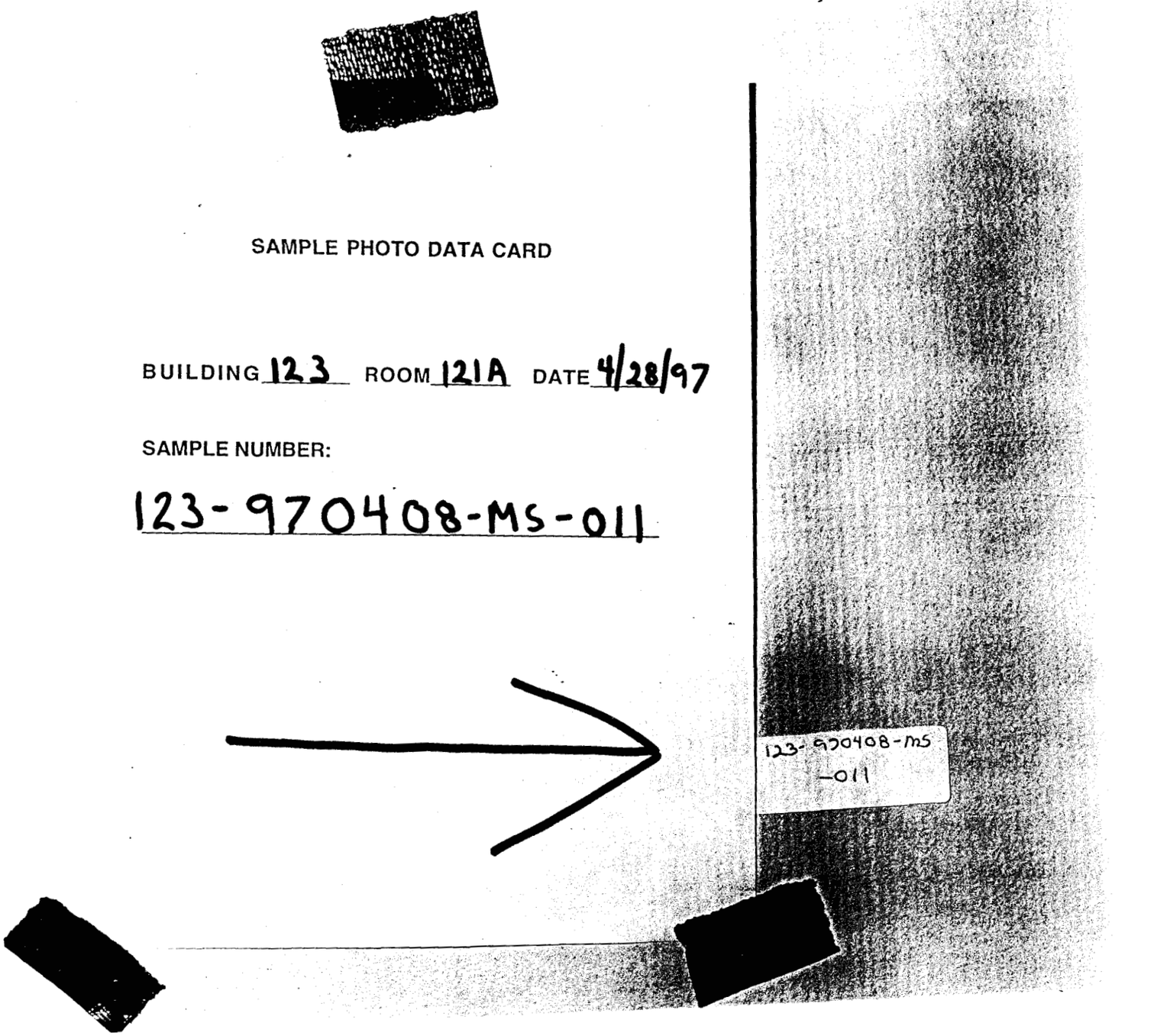
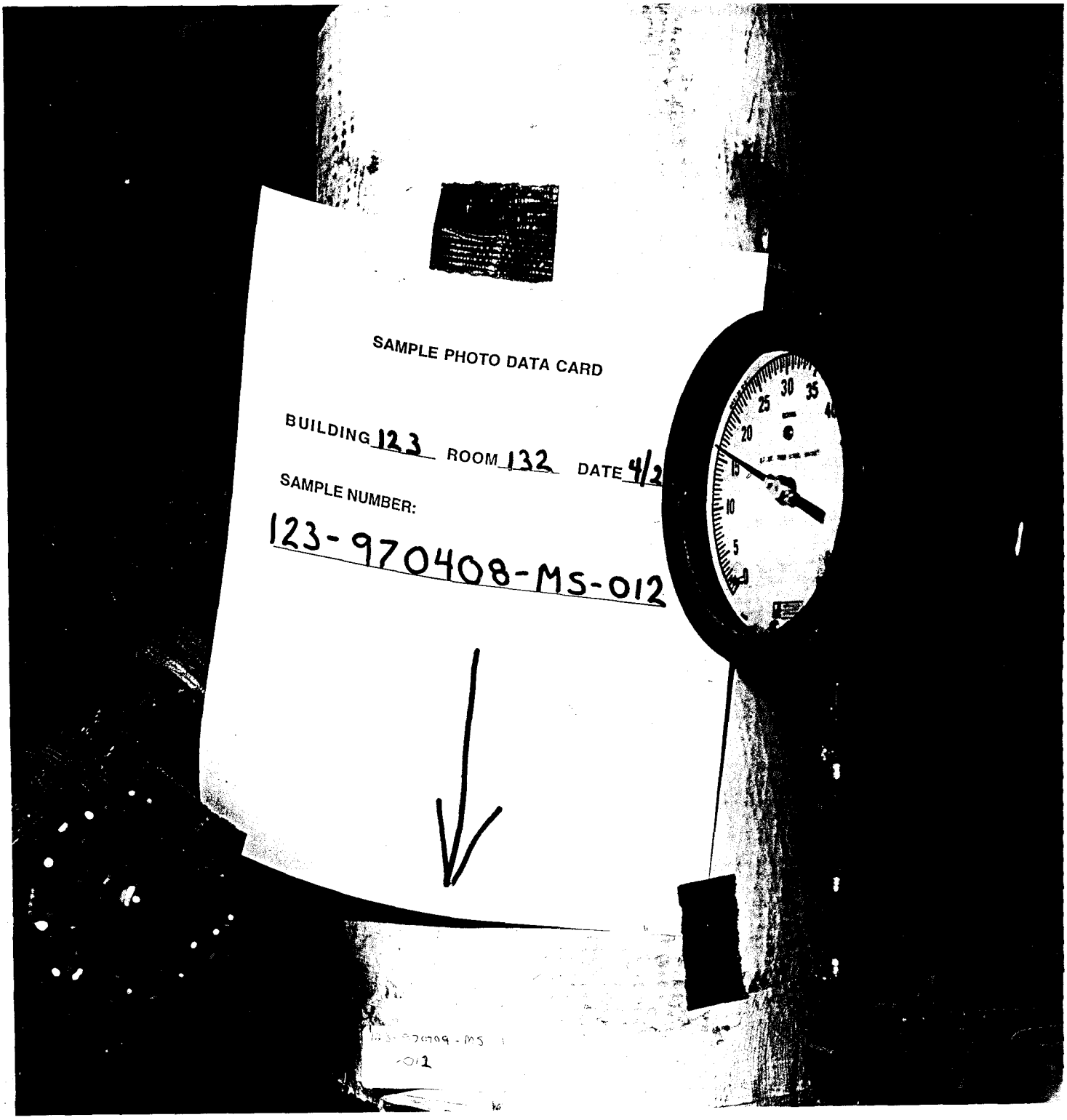
123-970408-MS-011

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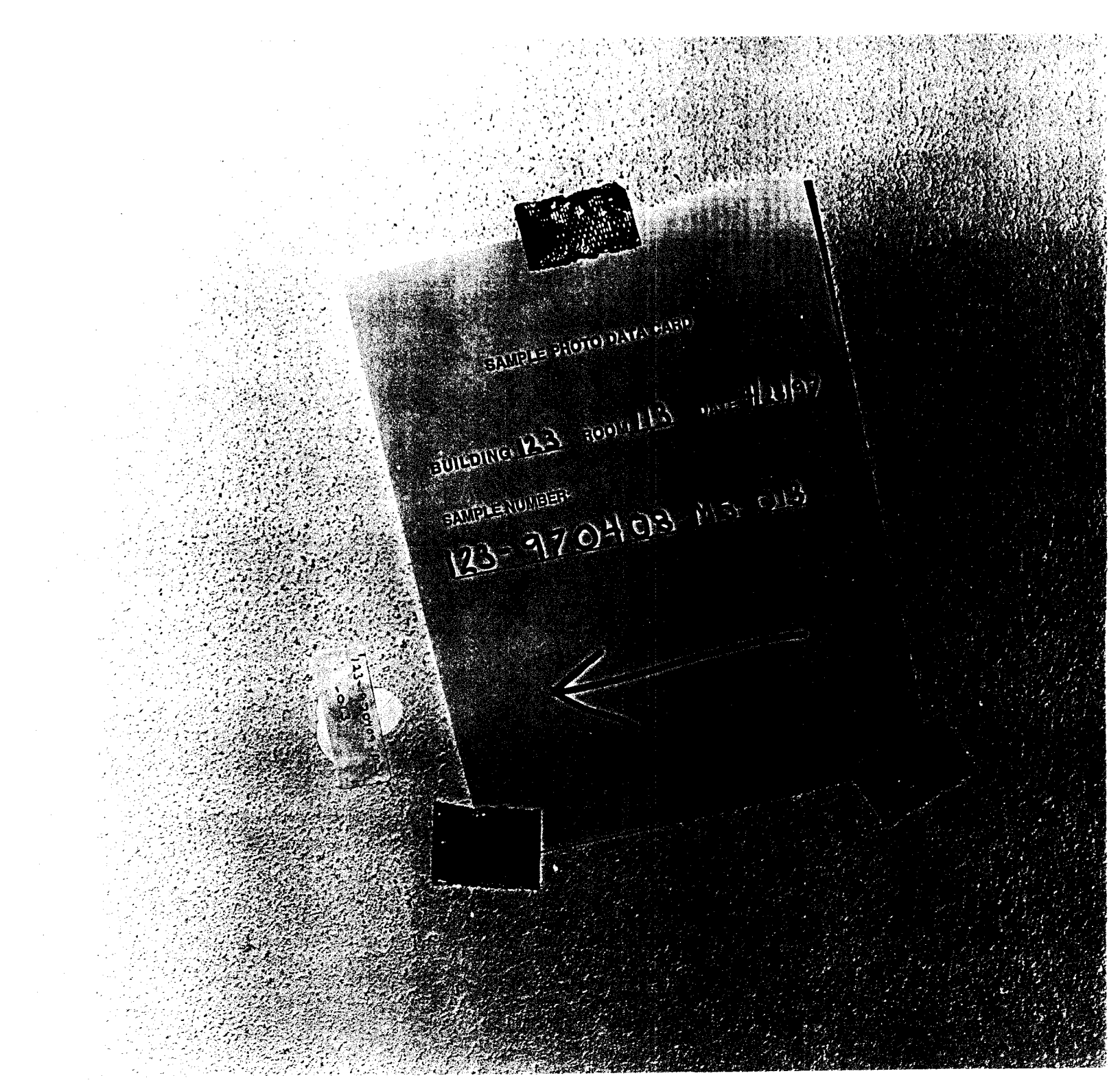
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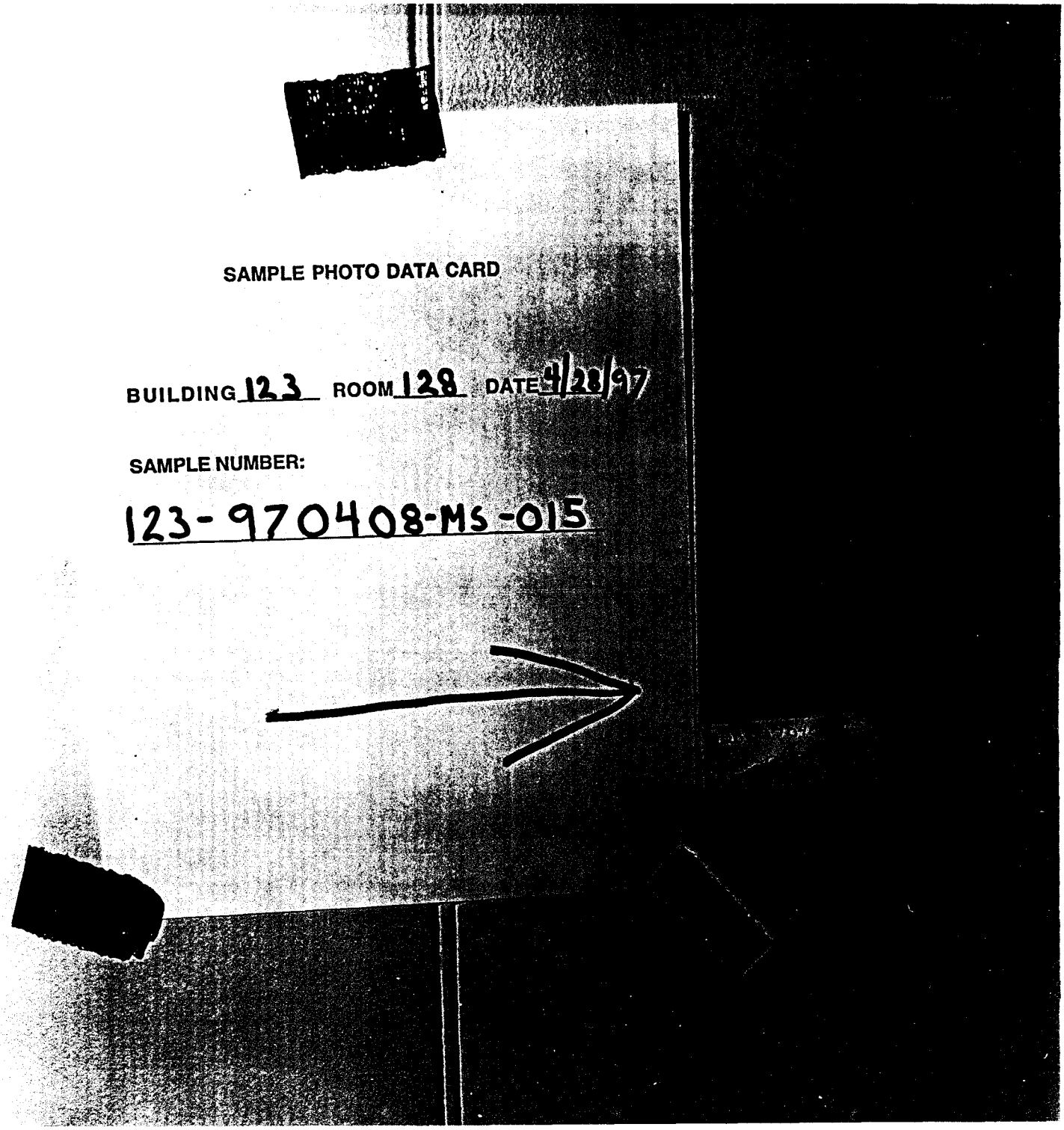
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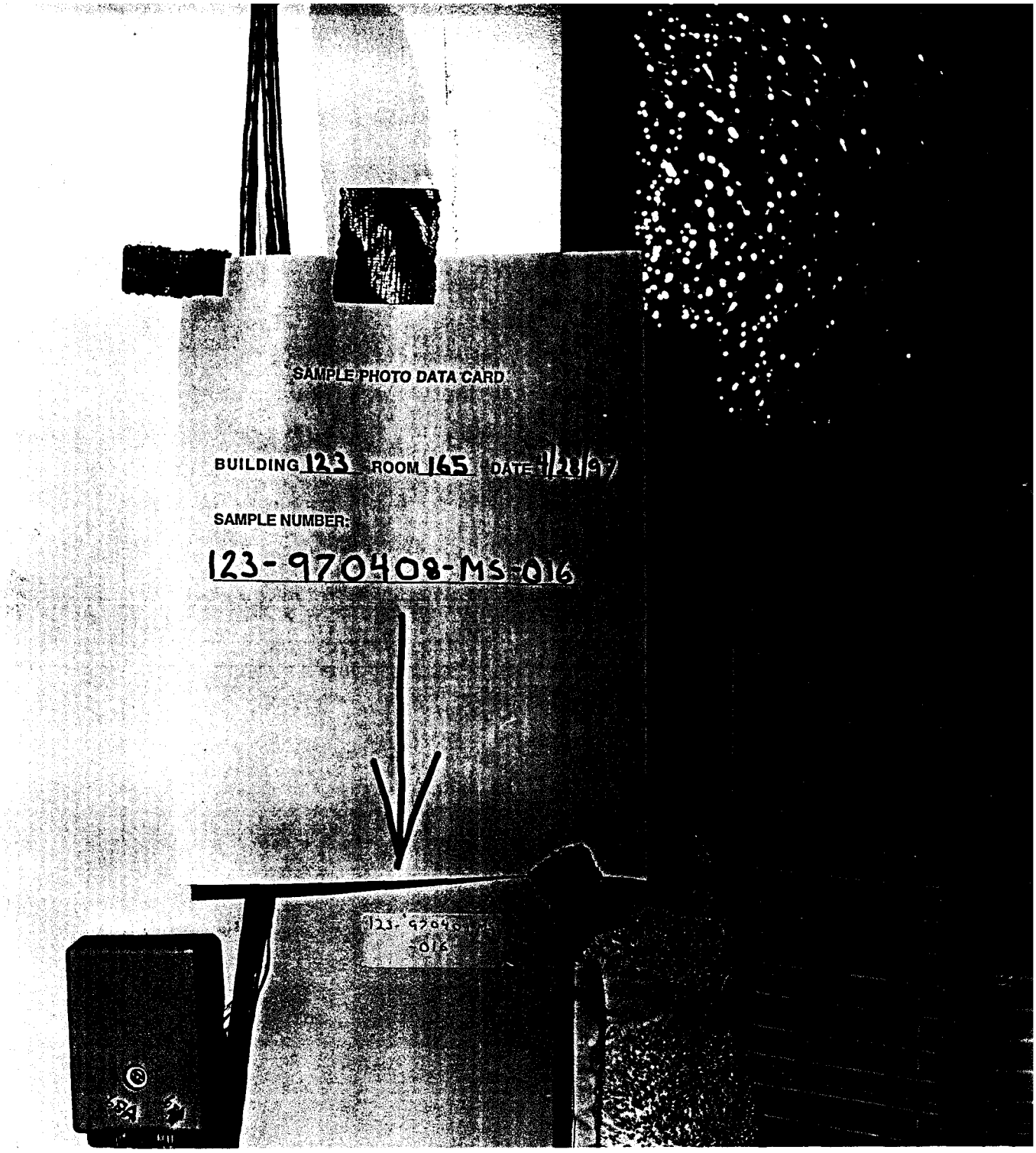
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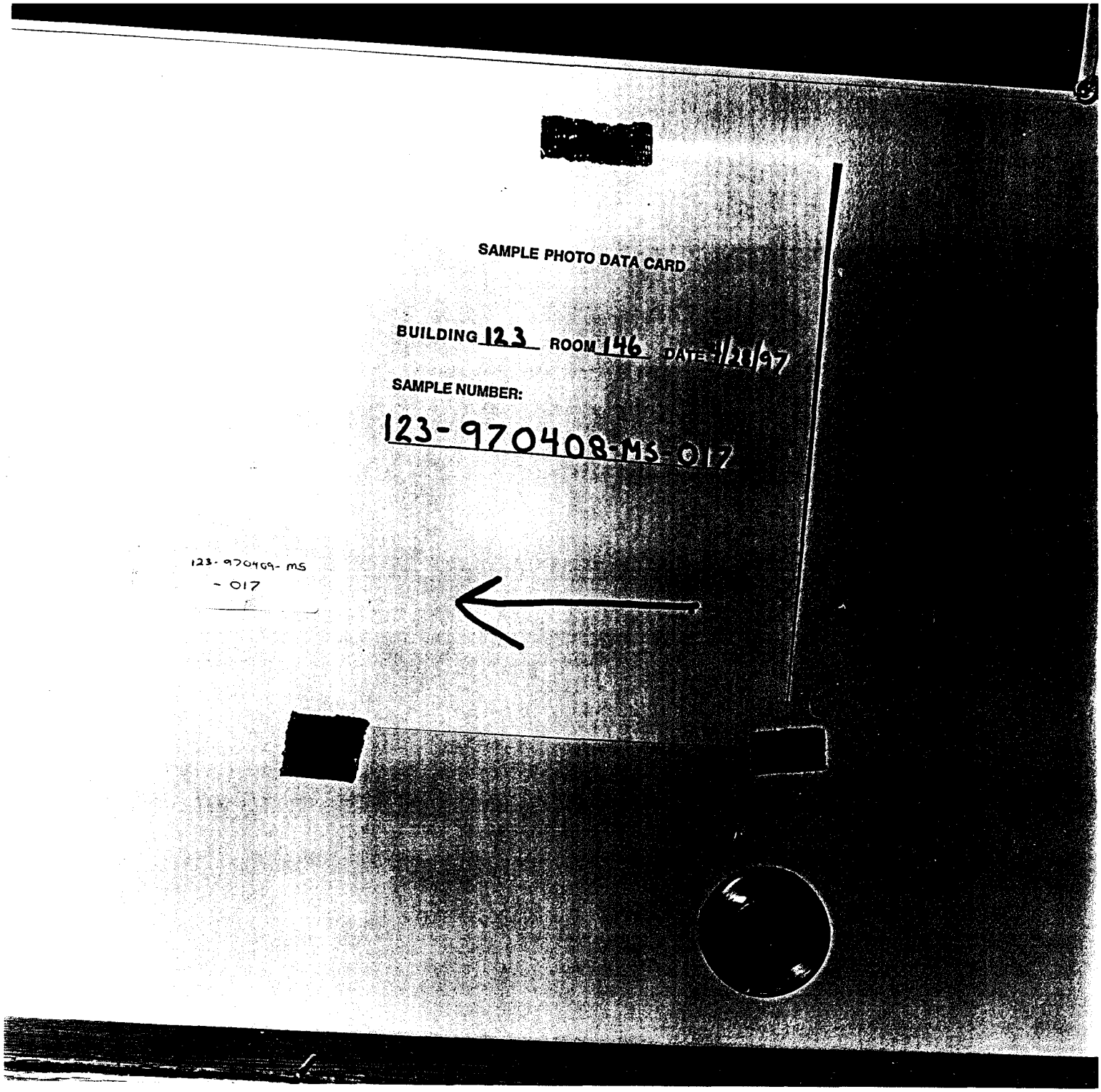
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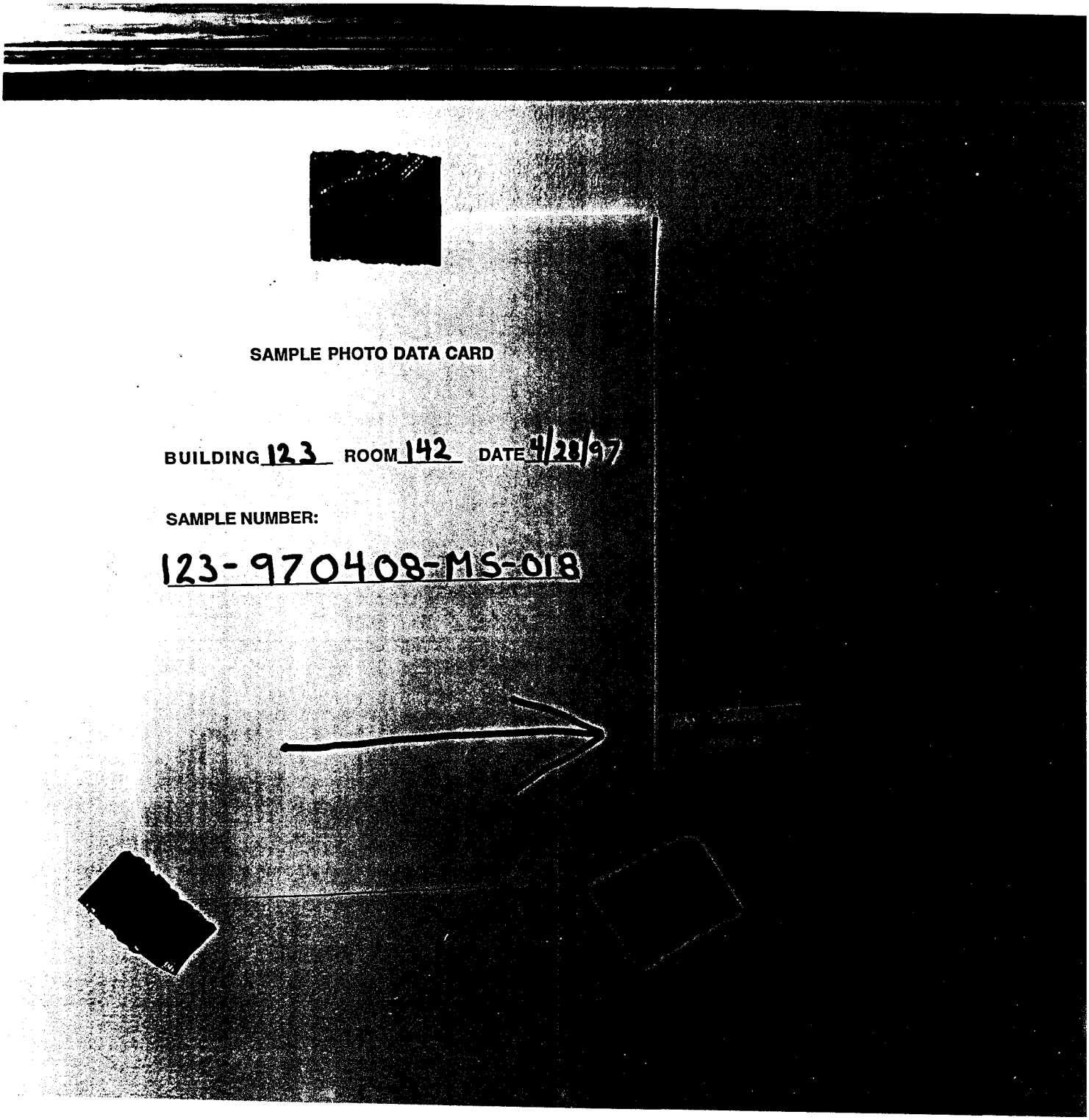
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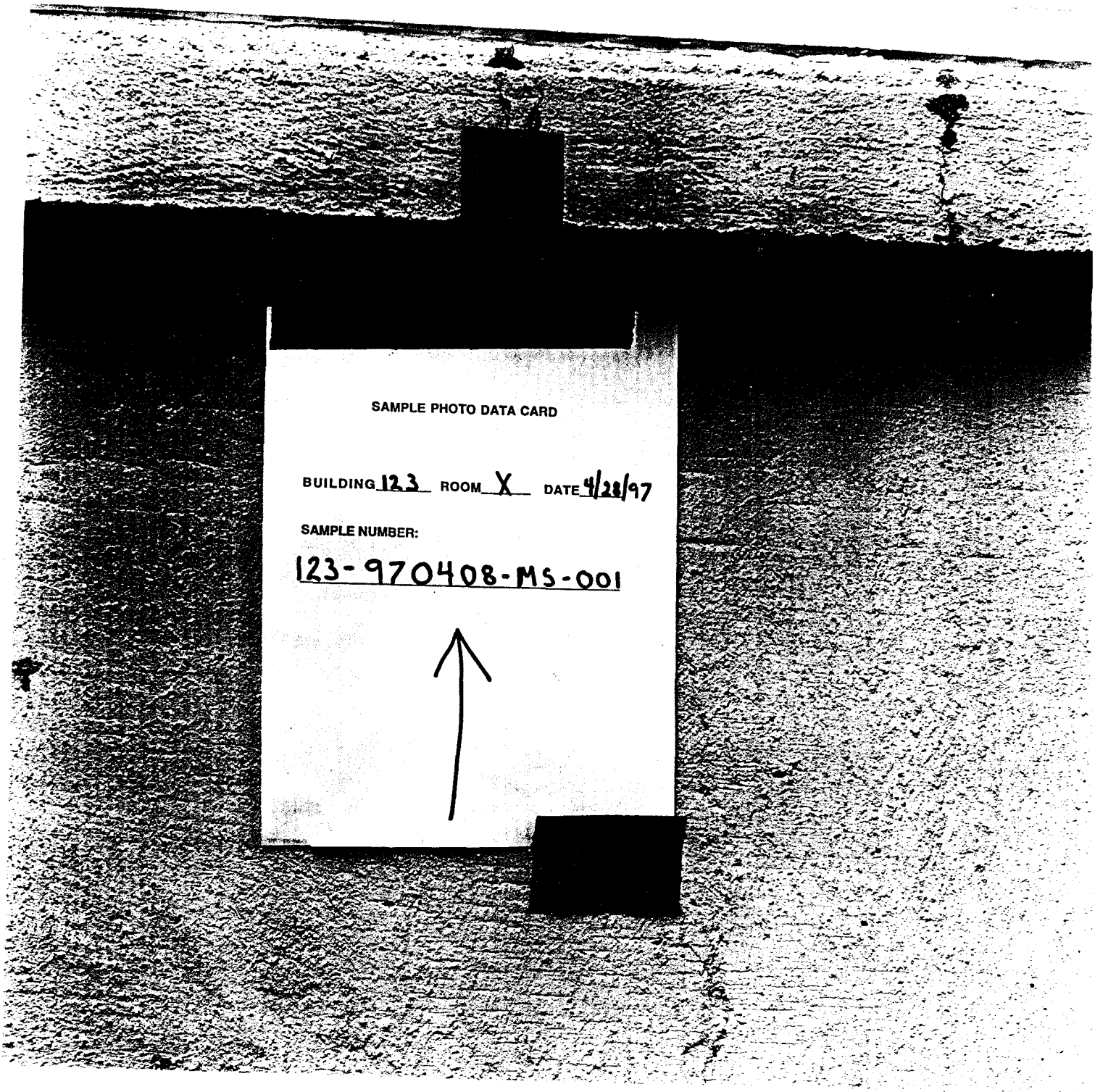
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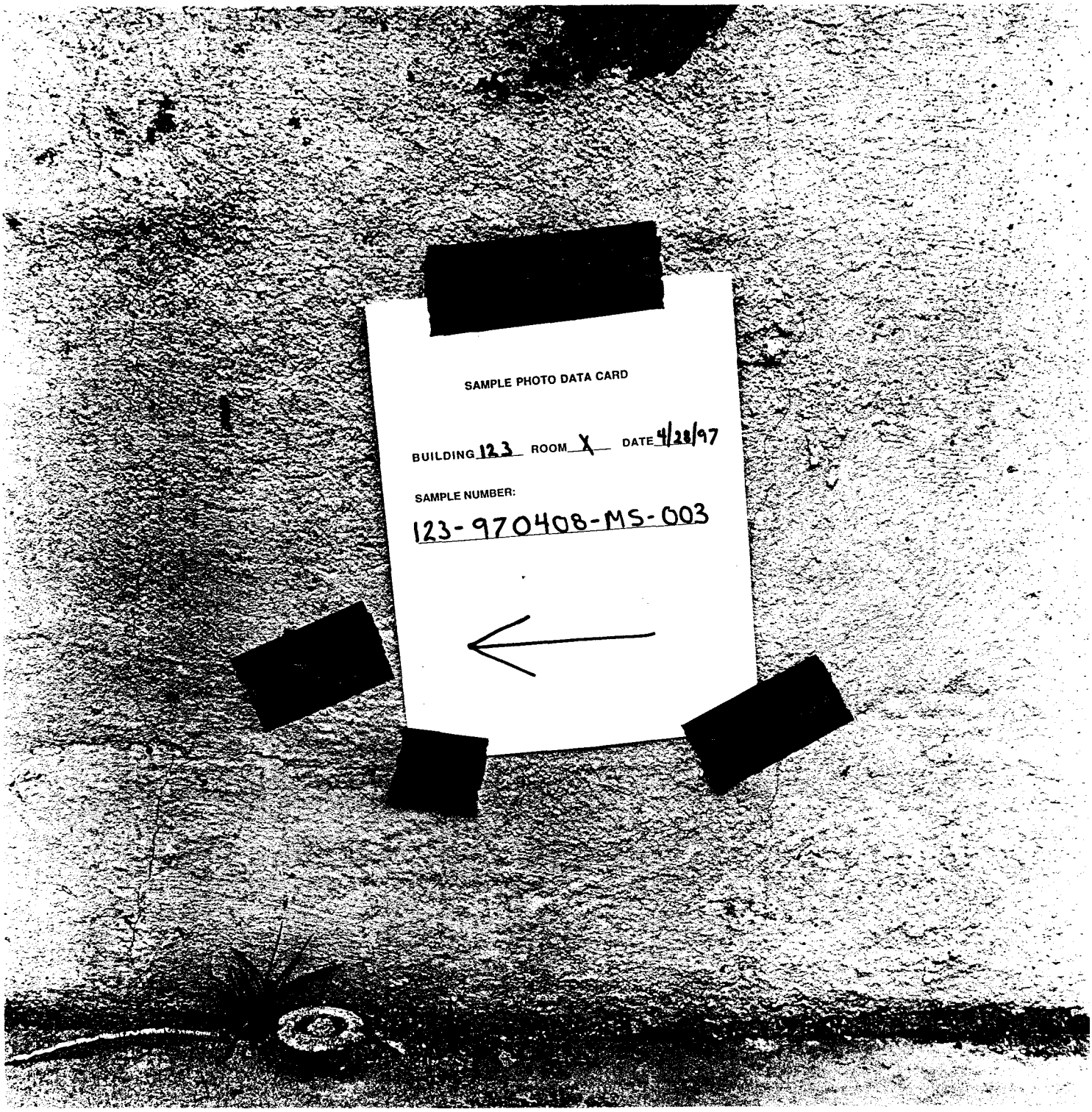
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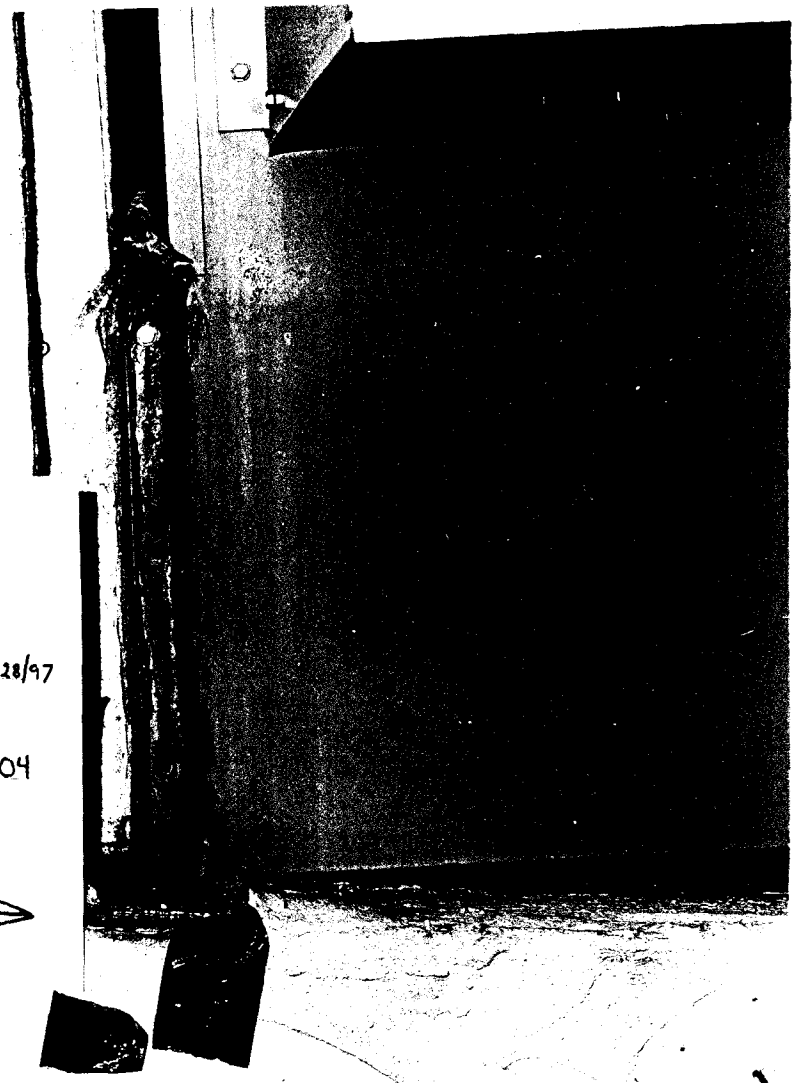

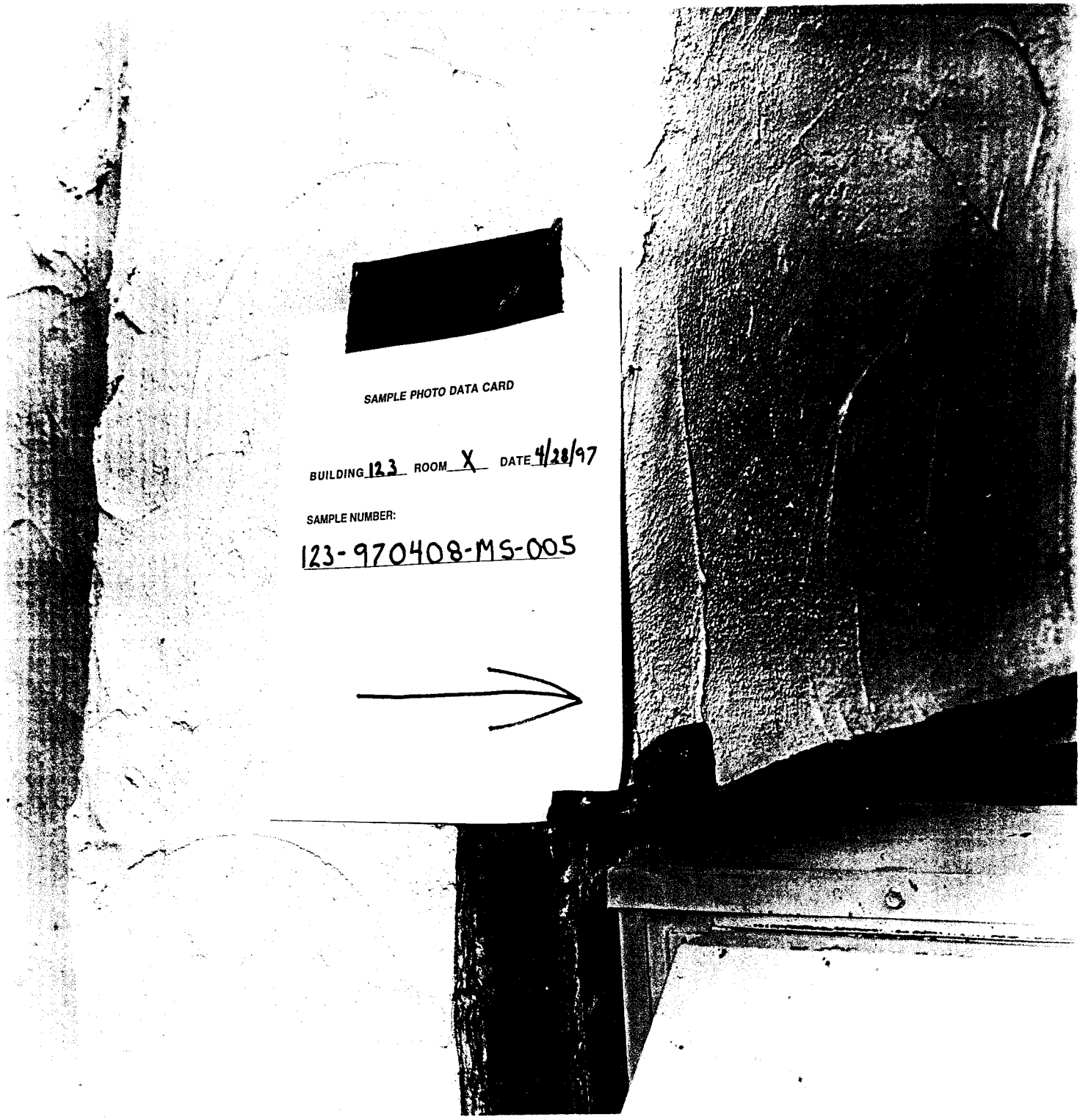
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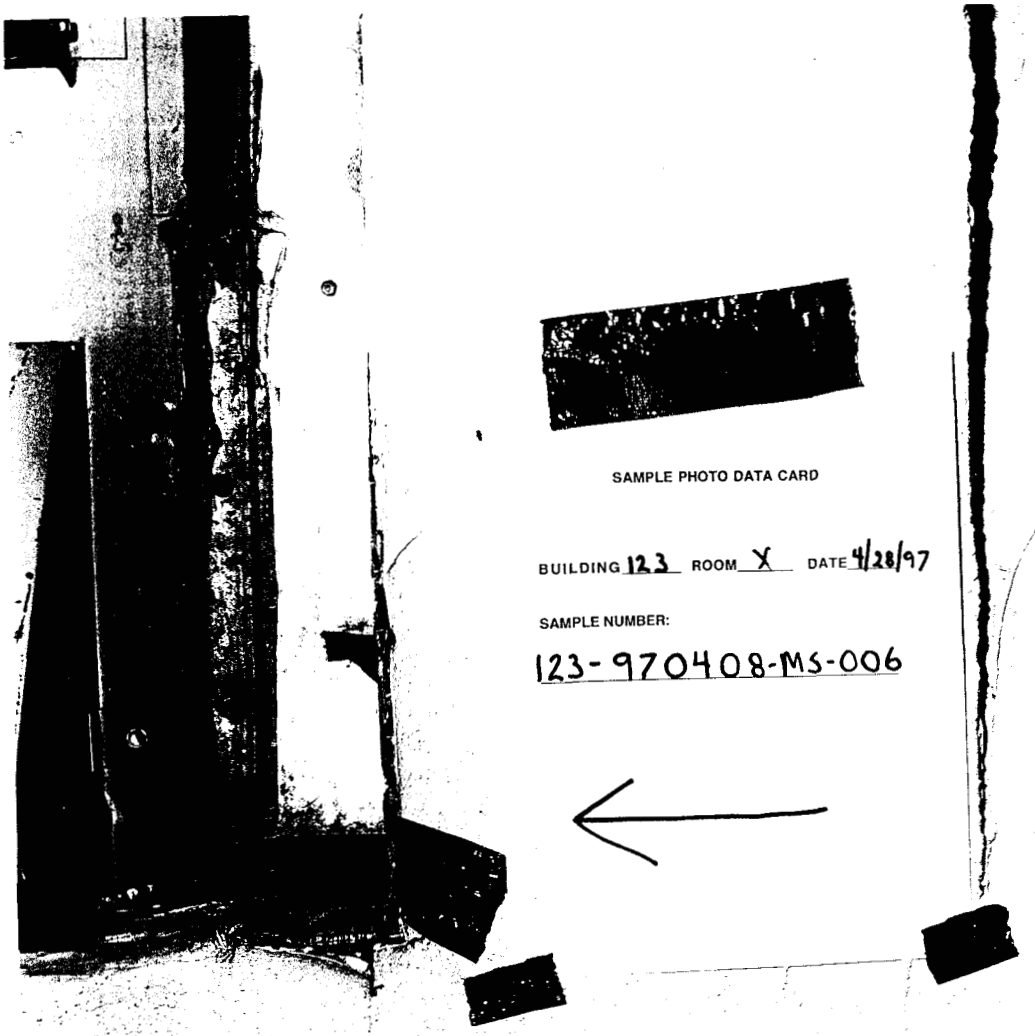
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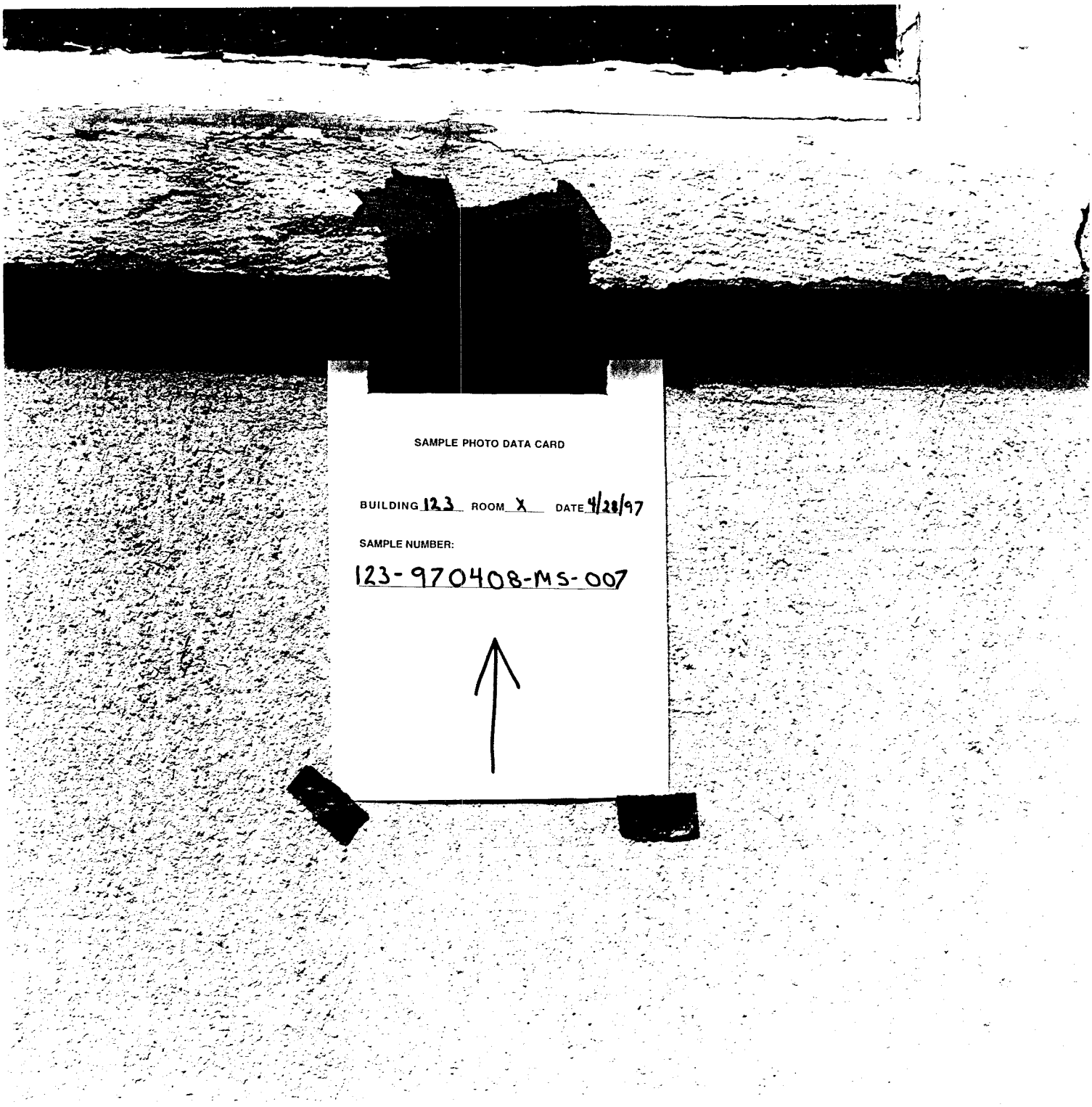
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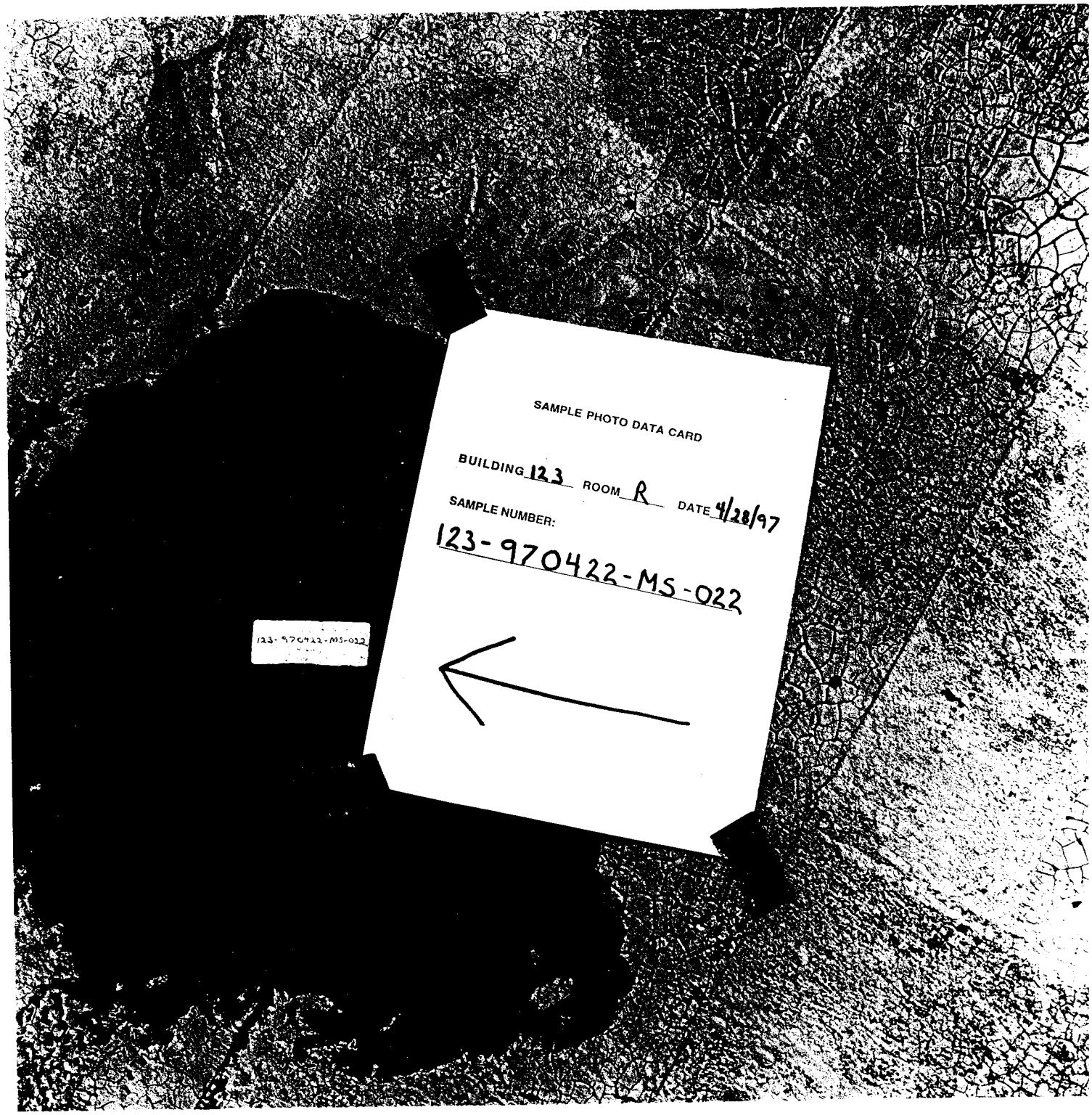
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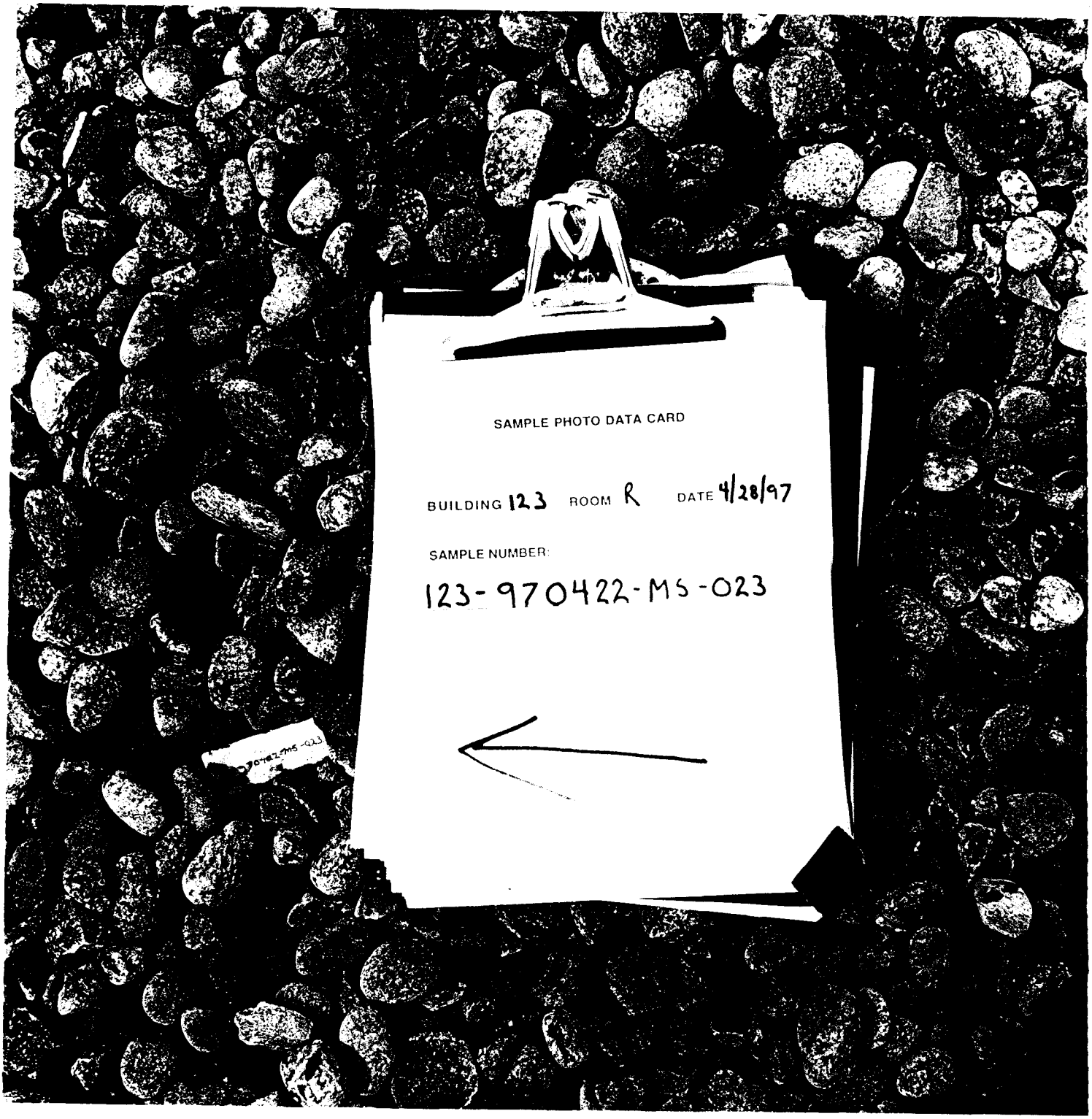
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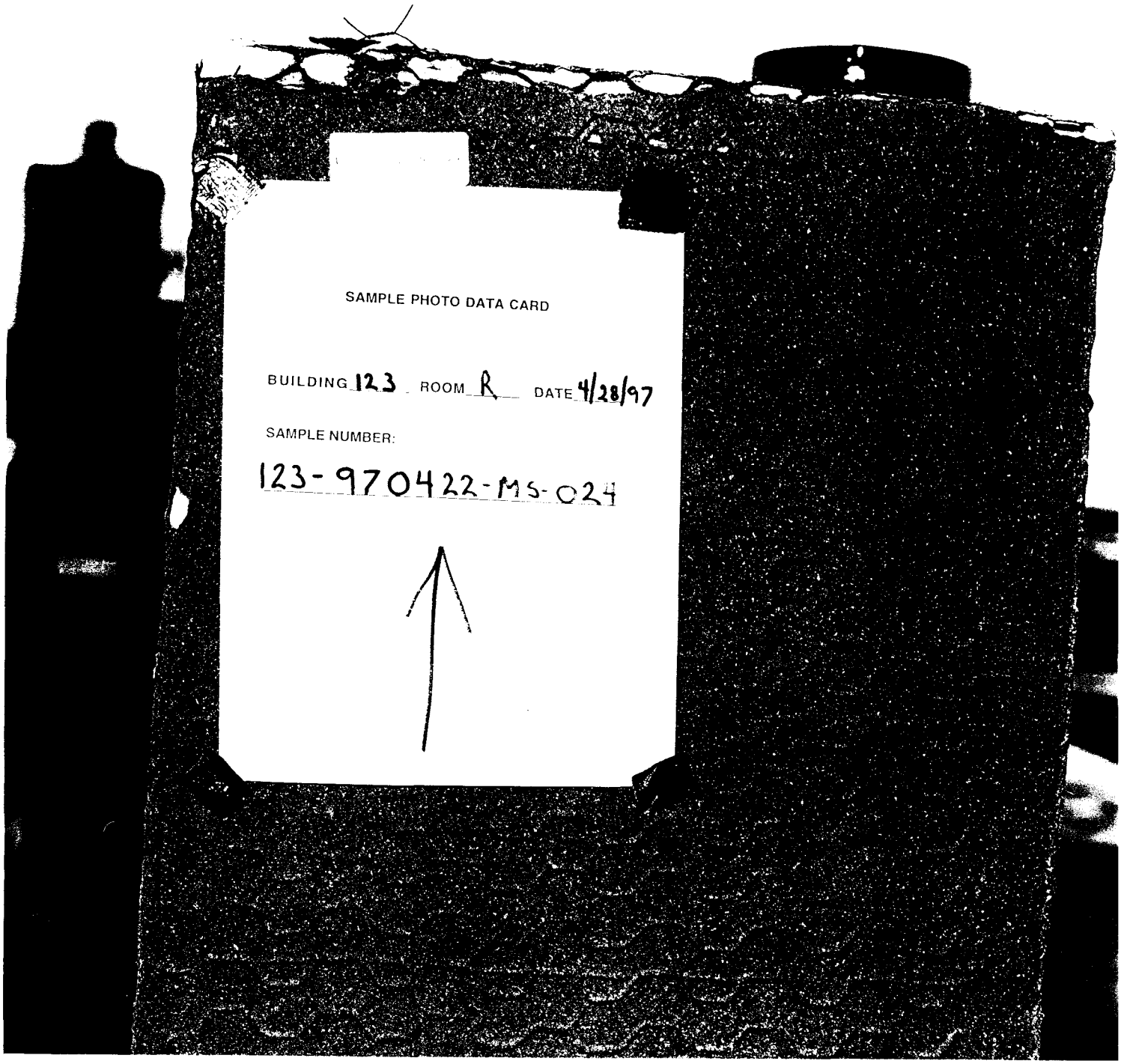
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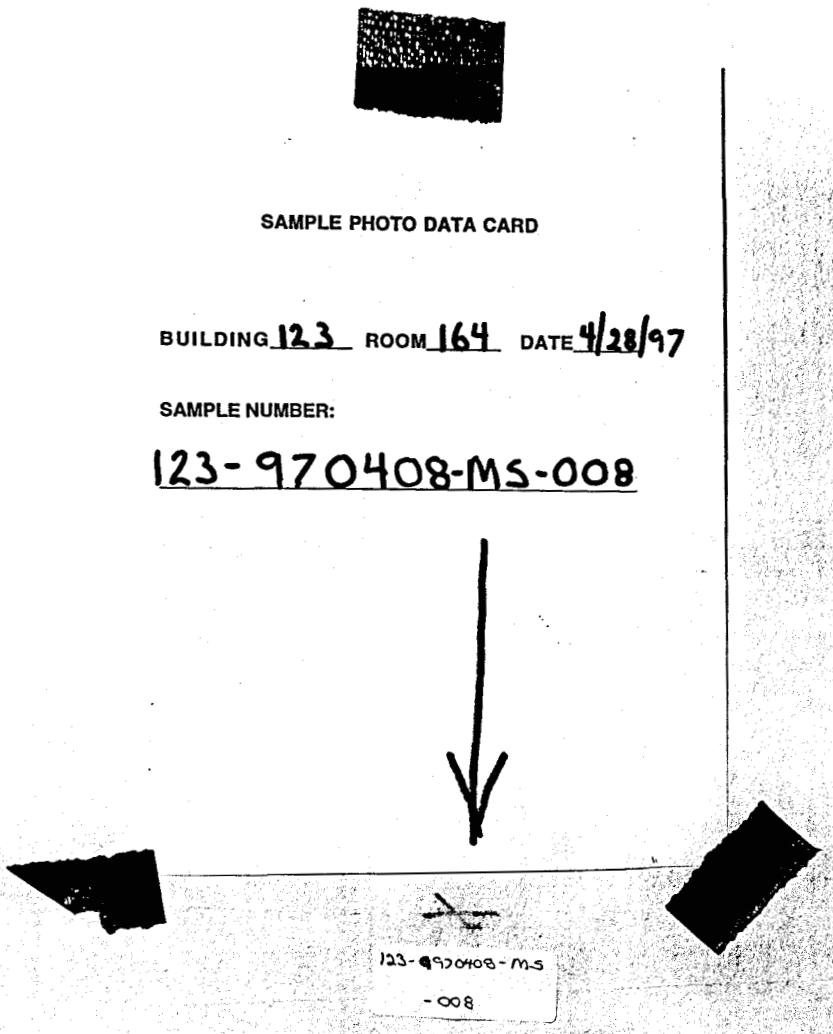

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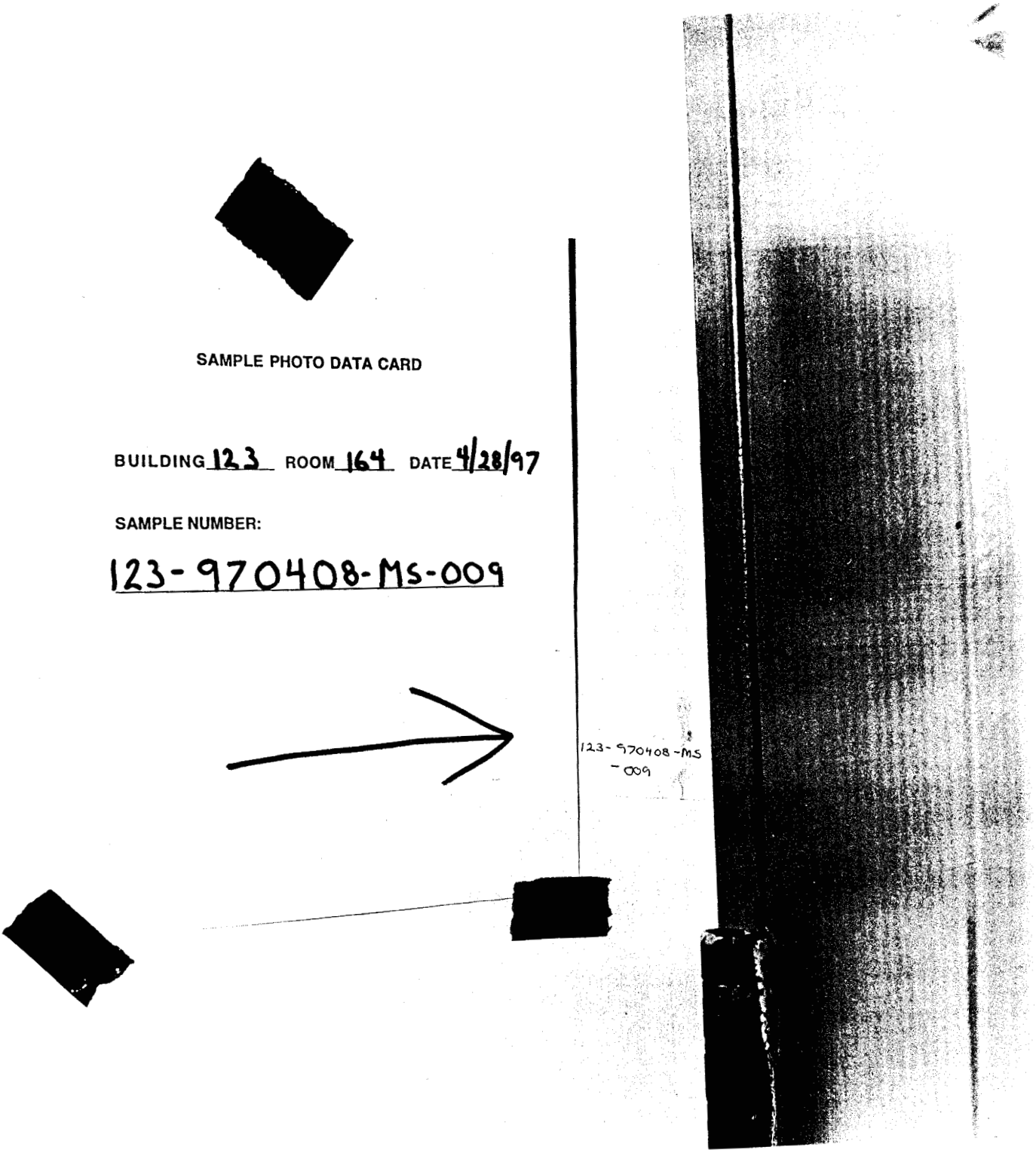

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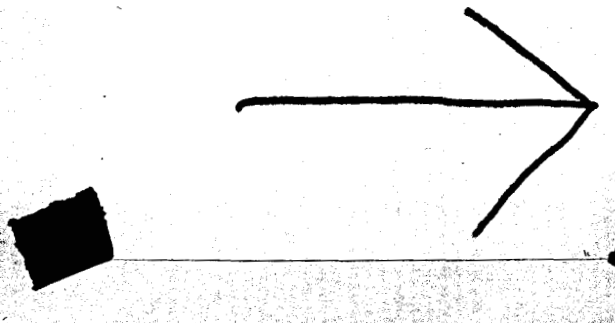

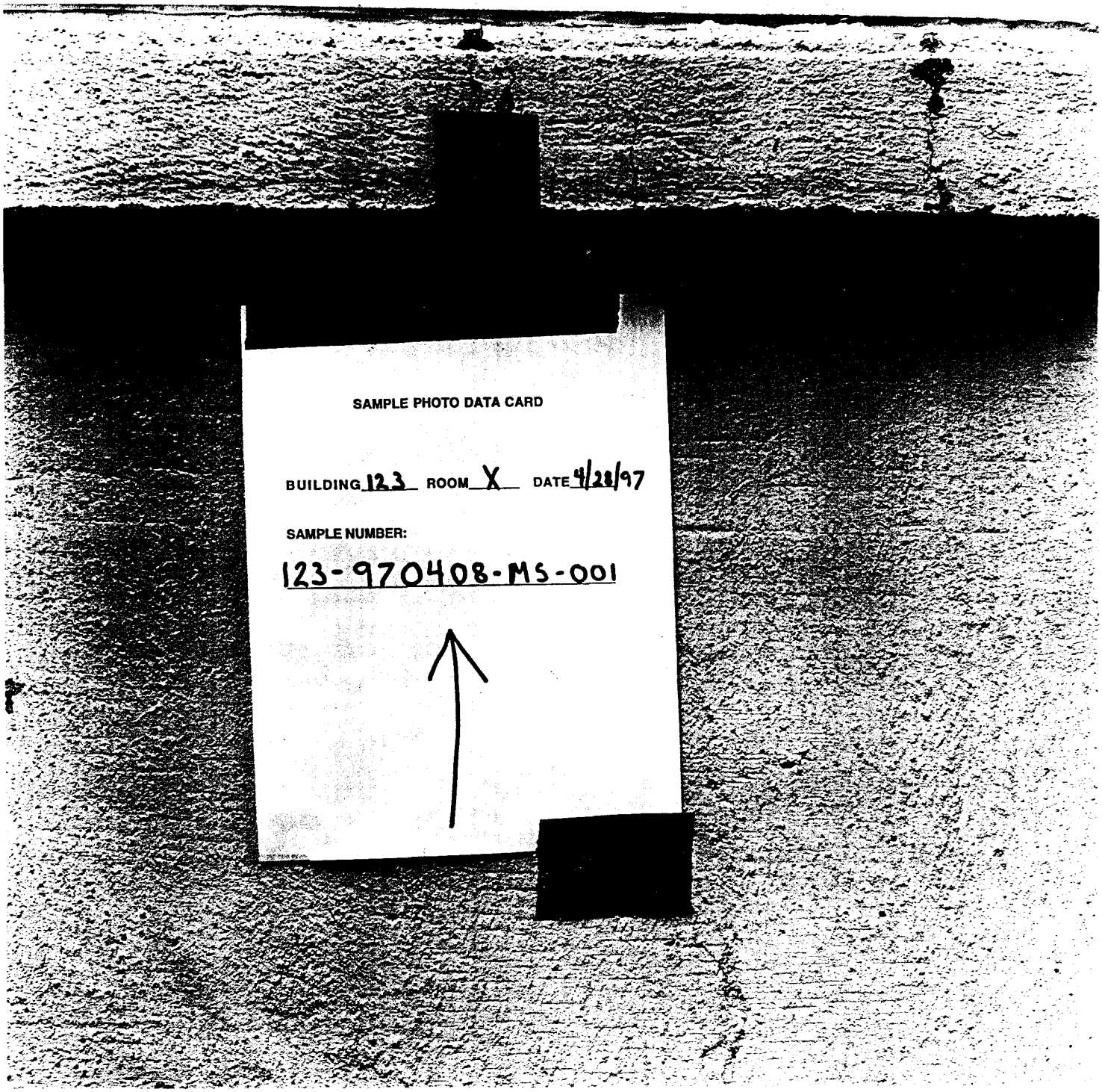
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BUILDING 123 ROOM X DATE 4/28/97
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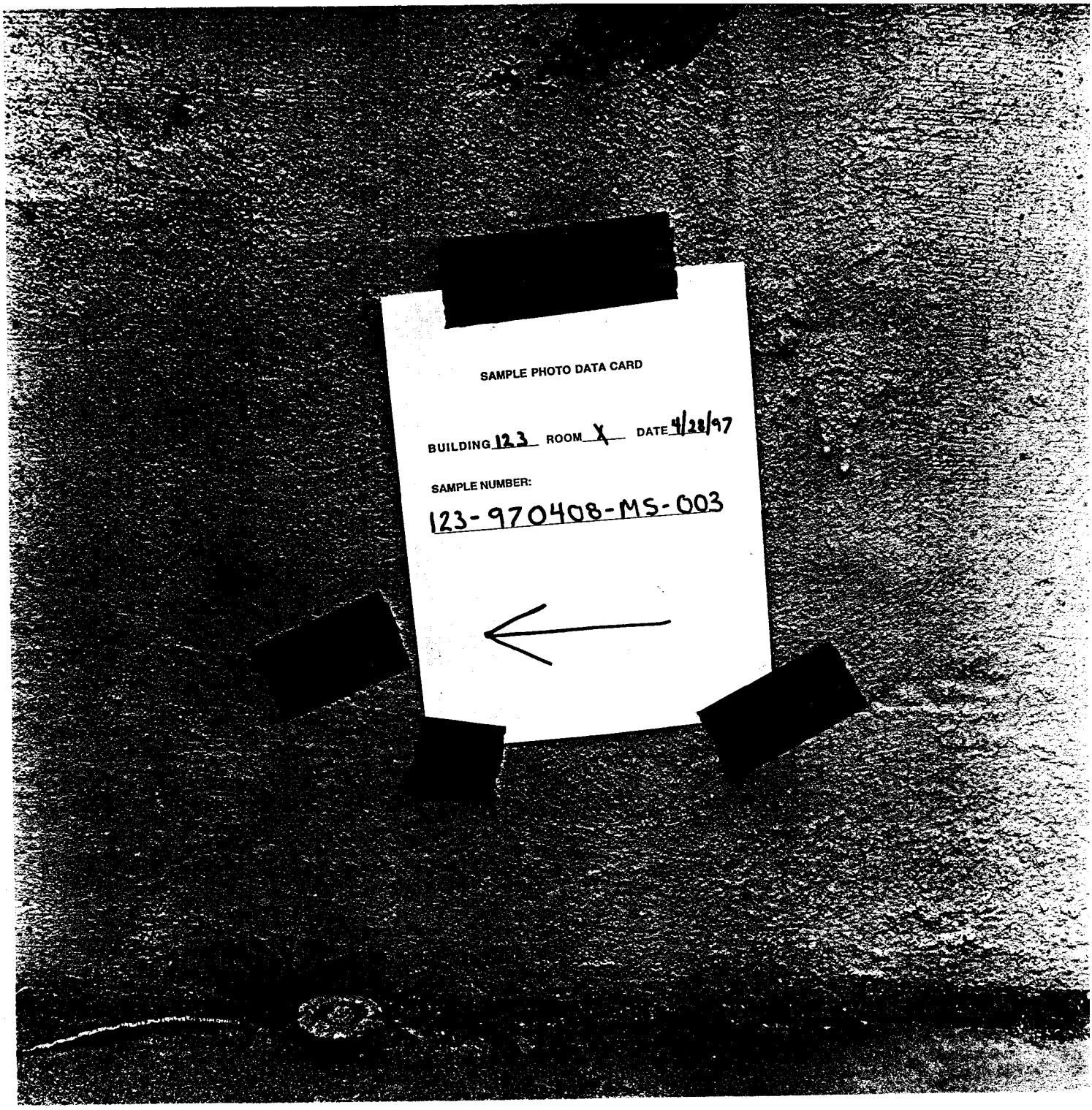
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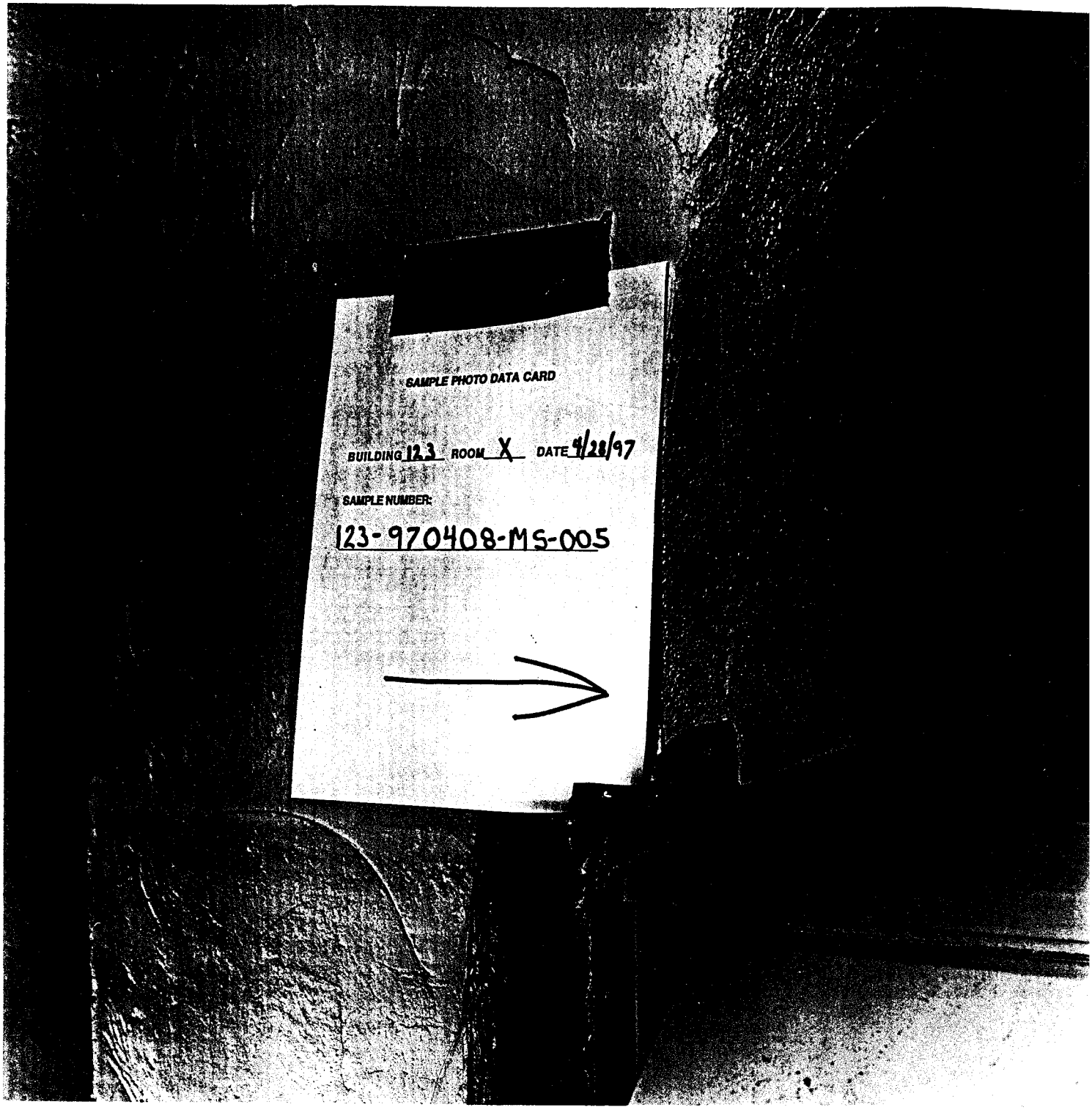
BUILDING 123 ROOM X DATE 9/28/97

SAMPLE NUMBER:

123-970408-MS-004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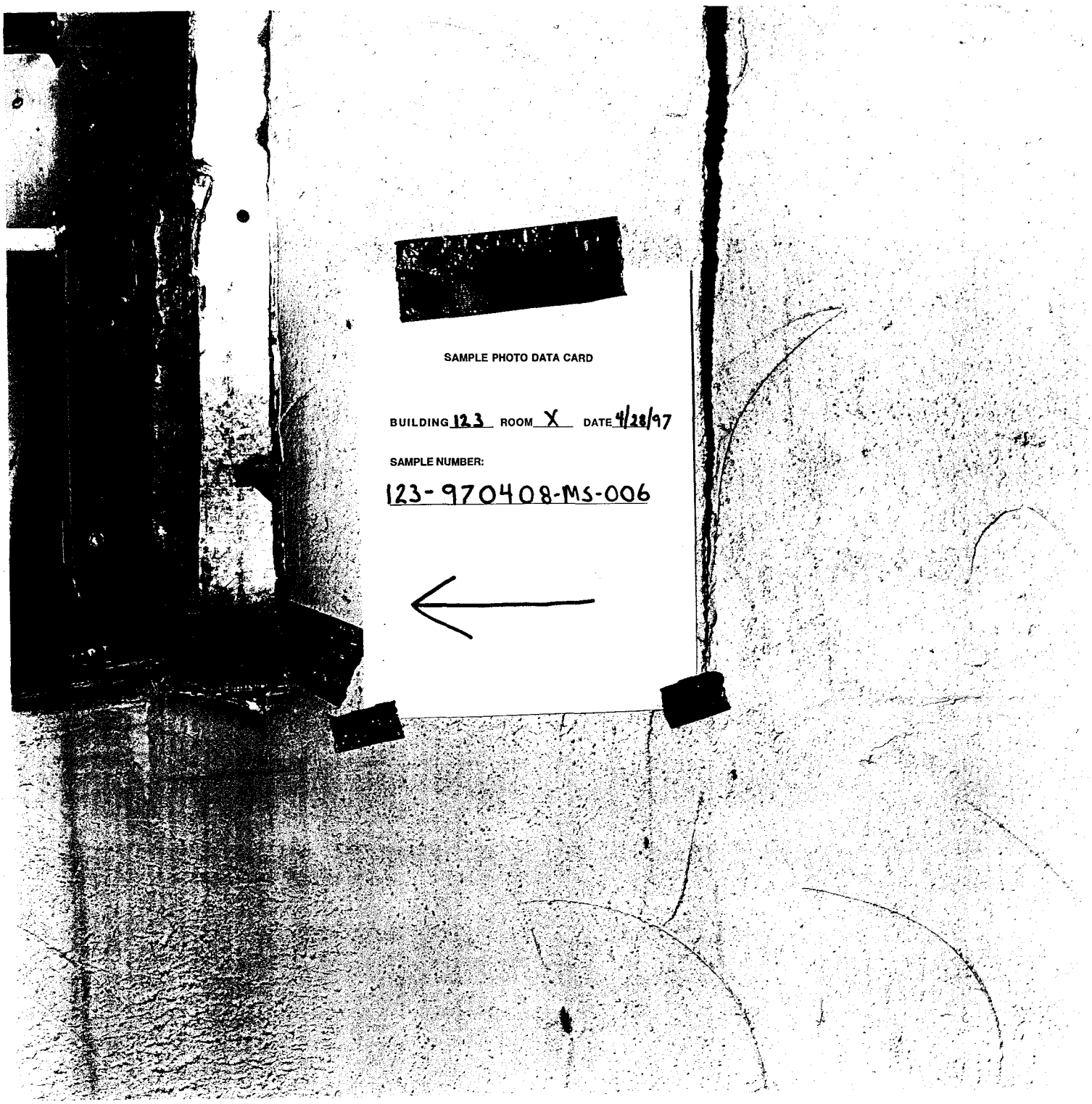
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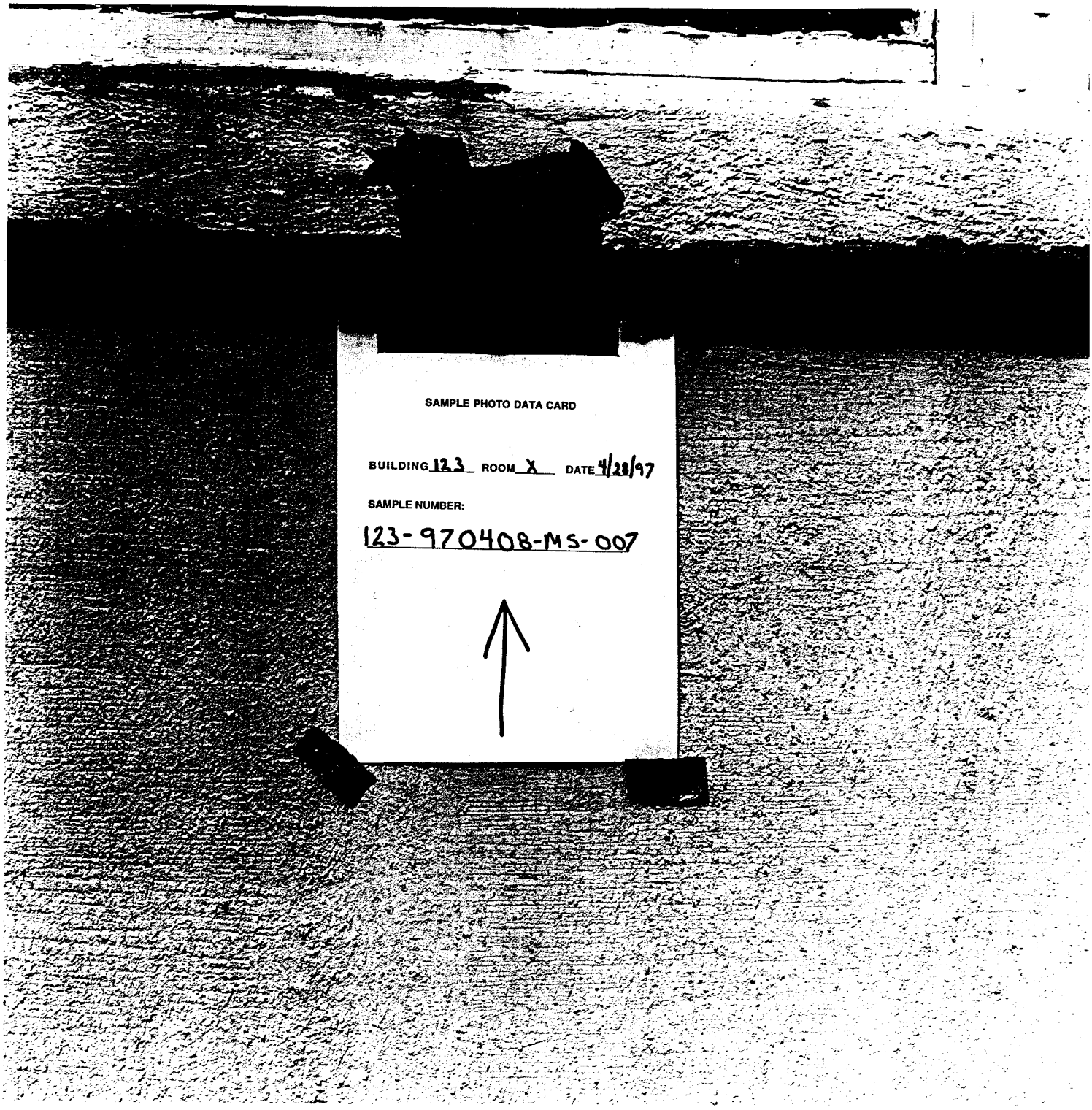
123-970408-MS-006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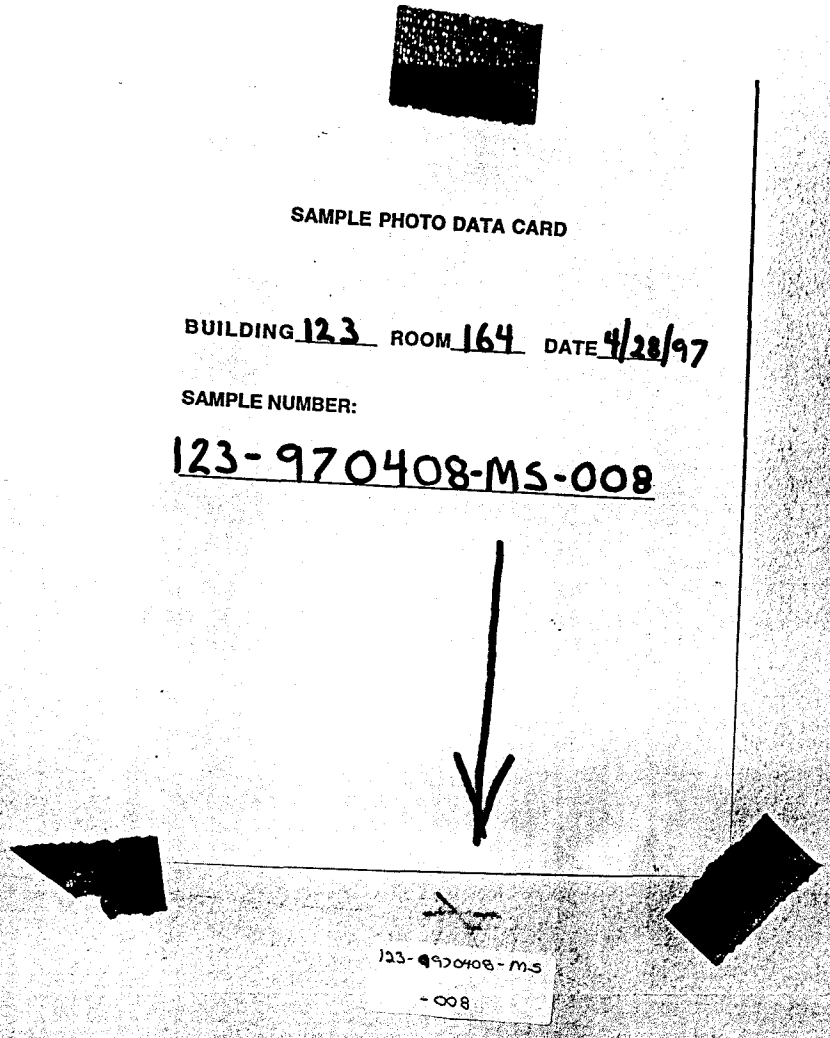
123-970408-MS-007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SAMPLE NUMBER:
123-970408-MS-008
123-970408-MS
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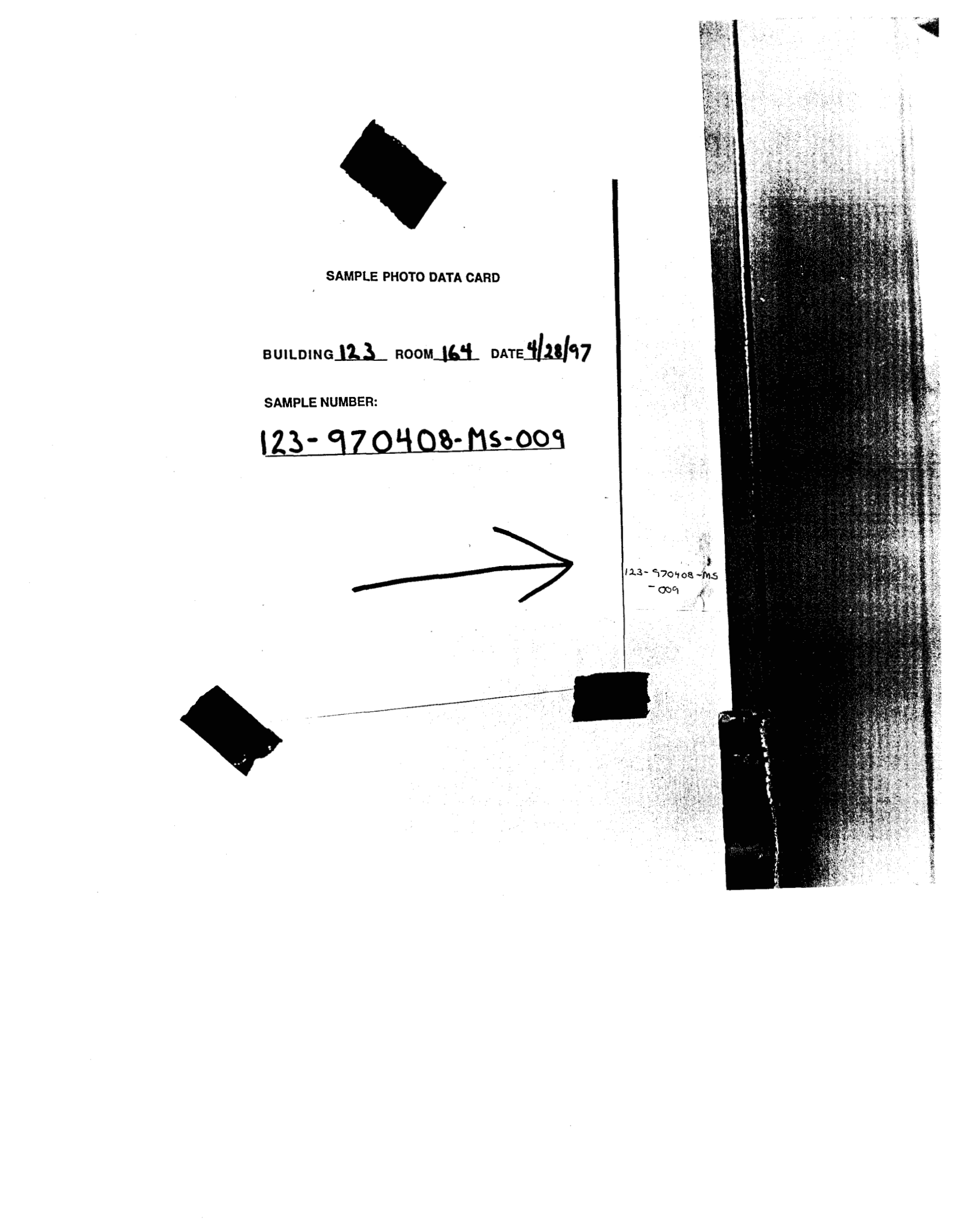

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BUILDING 123 ROOM 164 DATE 4/28/97

SAMPLE NUMBER:

123-970408-MS-009

123-970408-MS
-009

SAMPLE PHOTO DATA CARD

BUILDING 123 ROOM 164 DATE 4/28/97

SAMPLE NUMBER:

123-970408-MS-010

123-970408-MS
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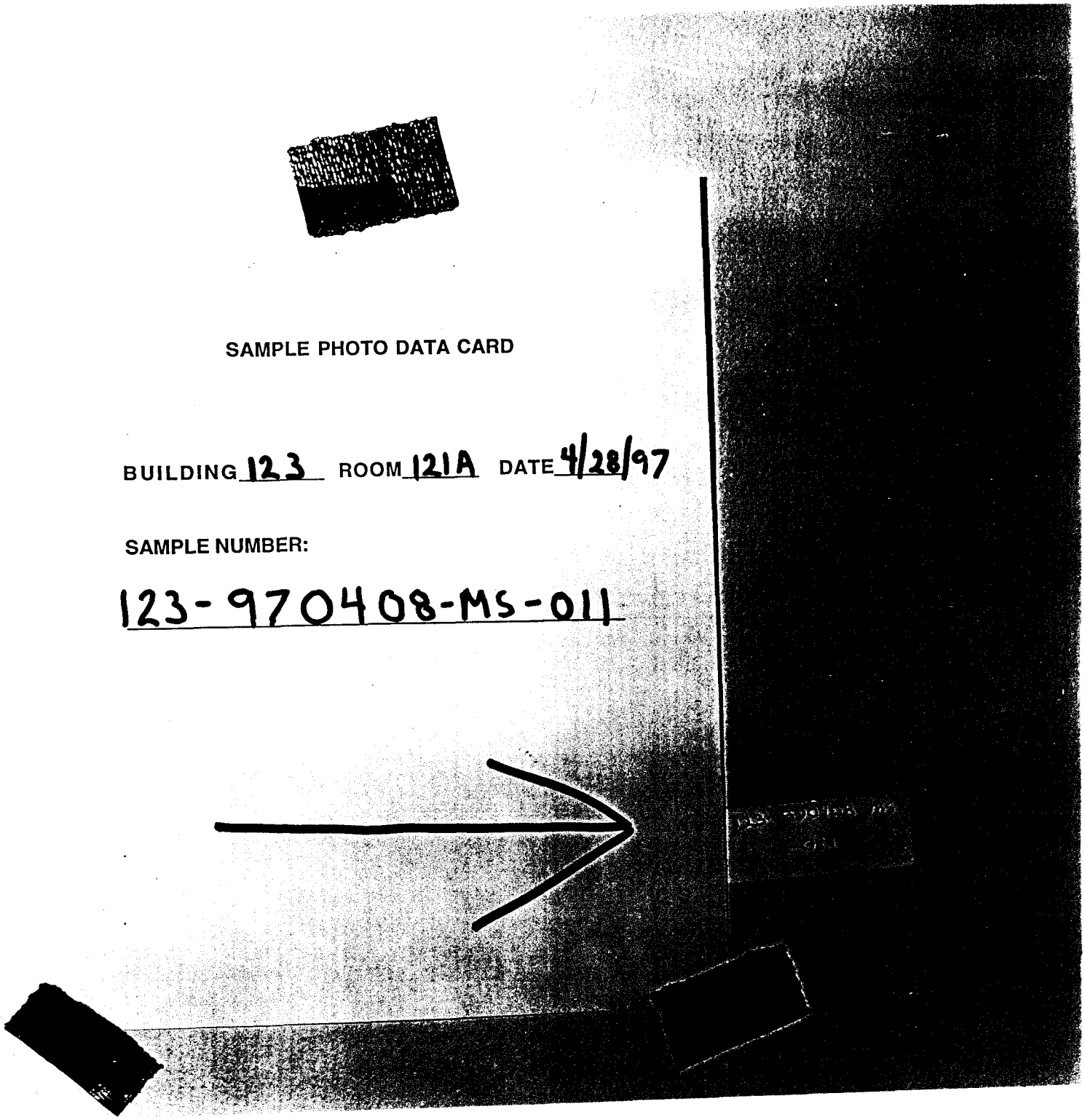

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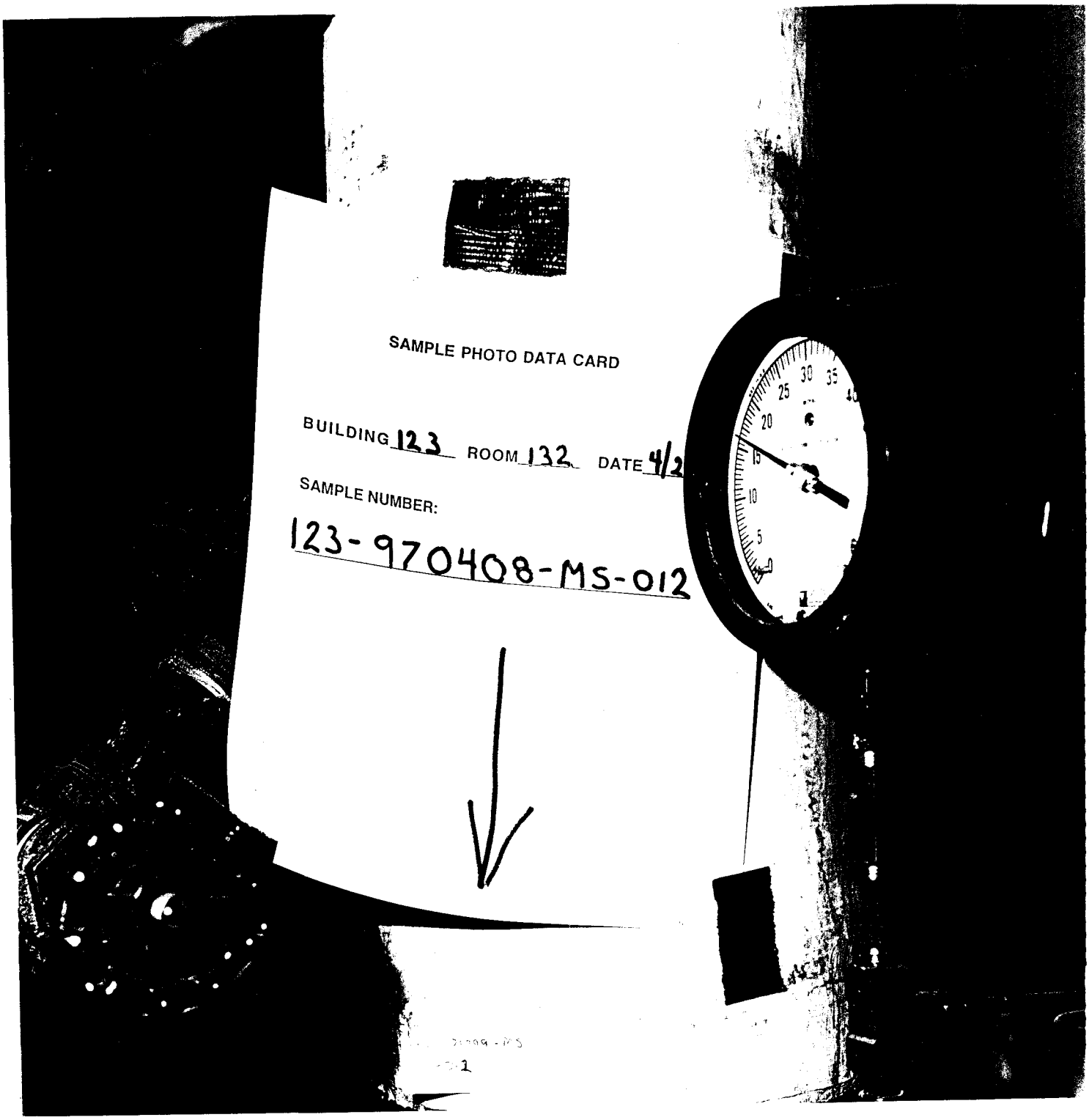
BUILDING 123 ROOM 121A DATE 4/28/97

SAMPLE NUMBER:

123-970408-MS-011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BUILDING 123 ROOM 132 DATE 4/2
SAMPLE NUMBER:
123-970408-MS-012

SAMPLE PHOTO DATA CARD

BUILDING 123 ROOM 113 DATE 4/28/97

SAMPLE NUMBER:

123-970408-MS-013

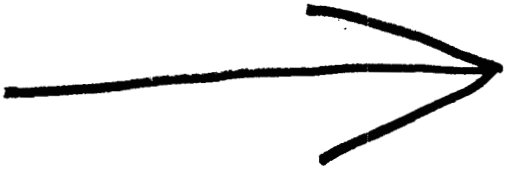
123-970408-MS
-013

SAMPLE PHOTO DATA CARD

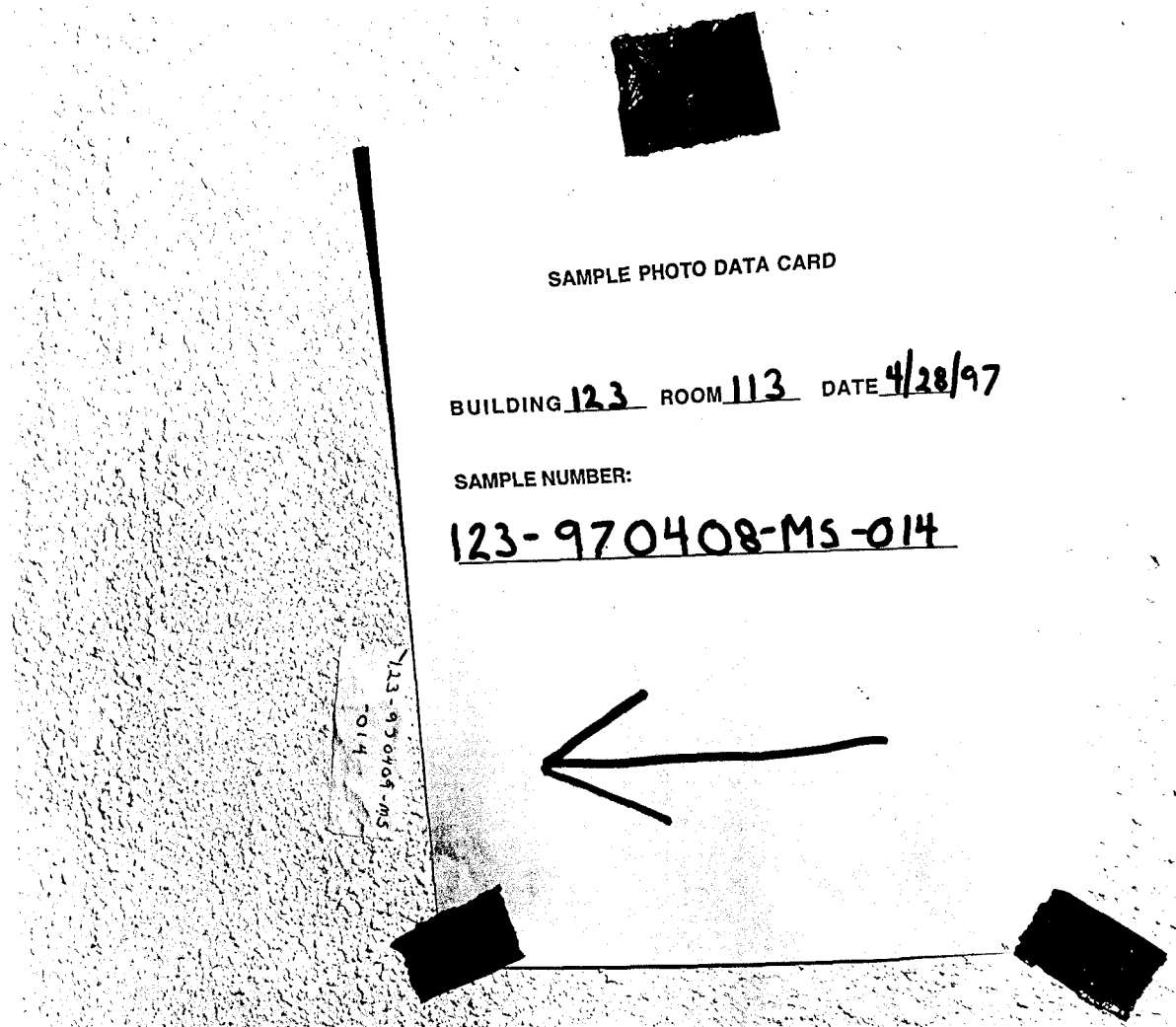
BUILDING 123 ROOM 128 DATE 4/28/97

SAMPLE NUMBER:

123-970408-MS-015



123-970409-MS
-015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BUILDING 123 ROOM 113 DATE 4/28/97
SAMPLE NUMBER:
123-970408-MS-014
123-970408-MS
014

SAMPLE PHOTO DATA CARD

BUILDING 123 ROOM 165 DATE 4/28/97

SAMPLE NUMBER:

123-970408-MS-016

123-970409-MS
-016

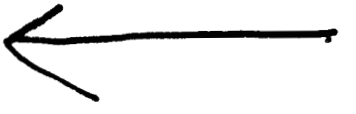
[redacted]

SAMPLE PHOTO DATA CARD

BUILDING 123 ROOM 146 DATE 4/28/97

SAMPLE NUMBER:

123-970408-MS-017



[redacted]

[redacted]

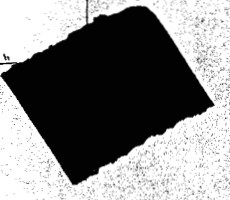
SAMPLE PHOTO DATA CARD

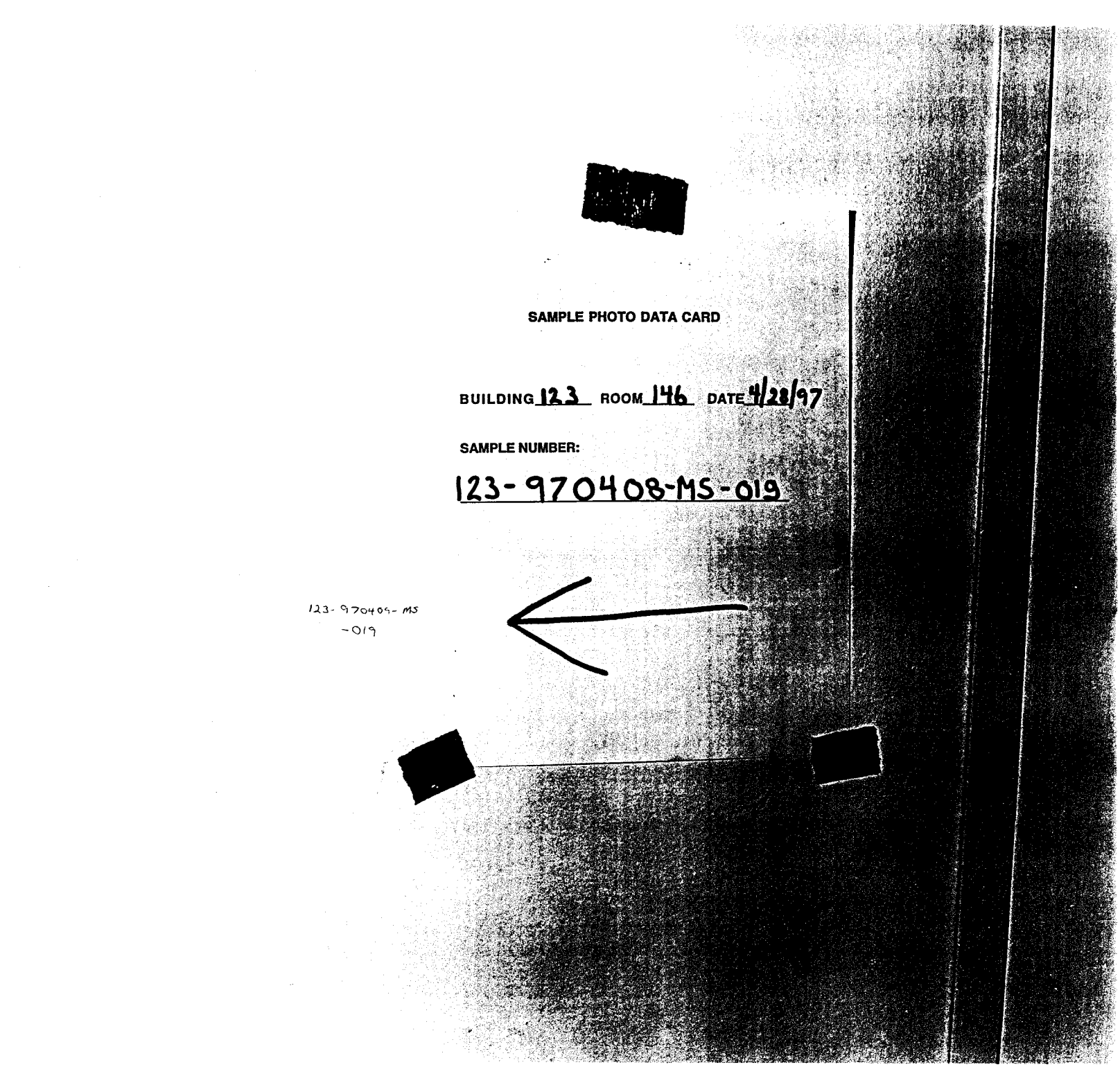
BUILDING 123 ROOM 142 DATE 4/28/97

SAMPLE NUMBER:

123-970408-MS-018

123-970409-MS
-018





SAMPLE PHOTO DATA CARD

BUILDING 123 ROOM 146 DATE 4/28/97

SAMPLE NUMBER:

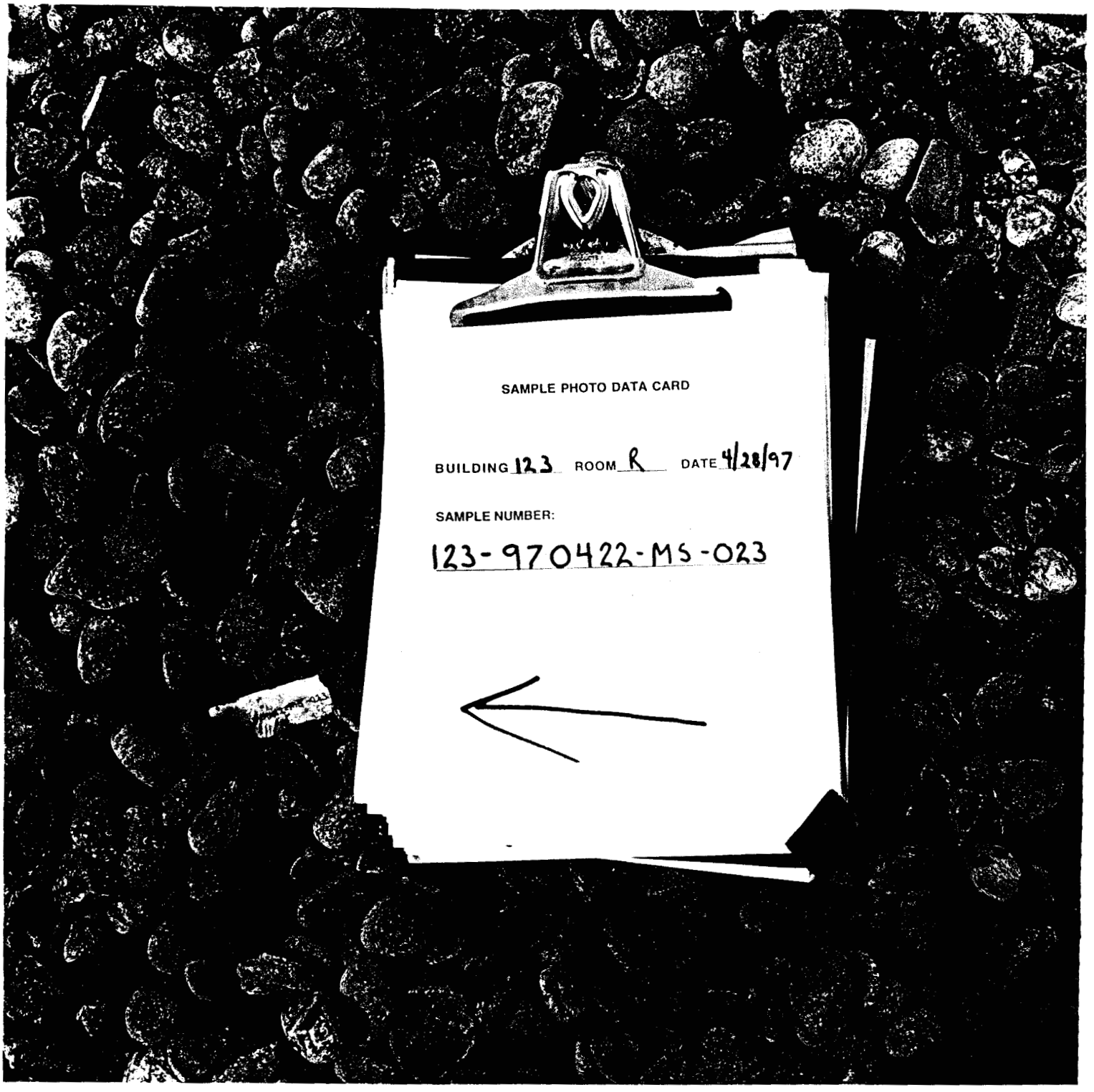
123-970408-MS-019

123-970409-MS
-019


SAMPLE PHOTO DATA CARD
BUILDING 123 ROOM R DATE 4/28/97
SAMPLE NUMBER:
123-970422-MS-020


SAMPLE PHOTO DATA CARD
BUILDING 123 ROOM R DATE 4/28/97
SAMPLE NUMBER:
123-970422-MS-021
123-970422-MS-021


SAMPLE PHOTO DATA CARD
BUILDING 123 ROOM R DATE 4/28/97
SAMPLE NUMBER:
123-970422-MS-022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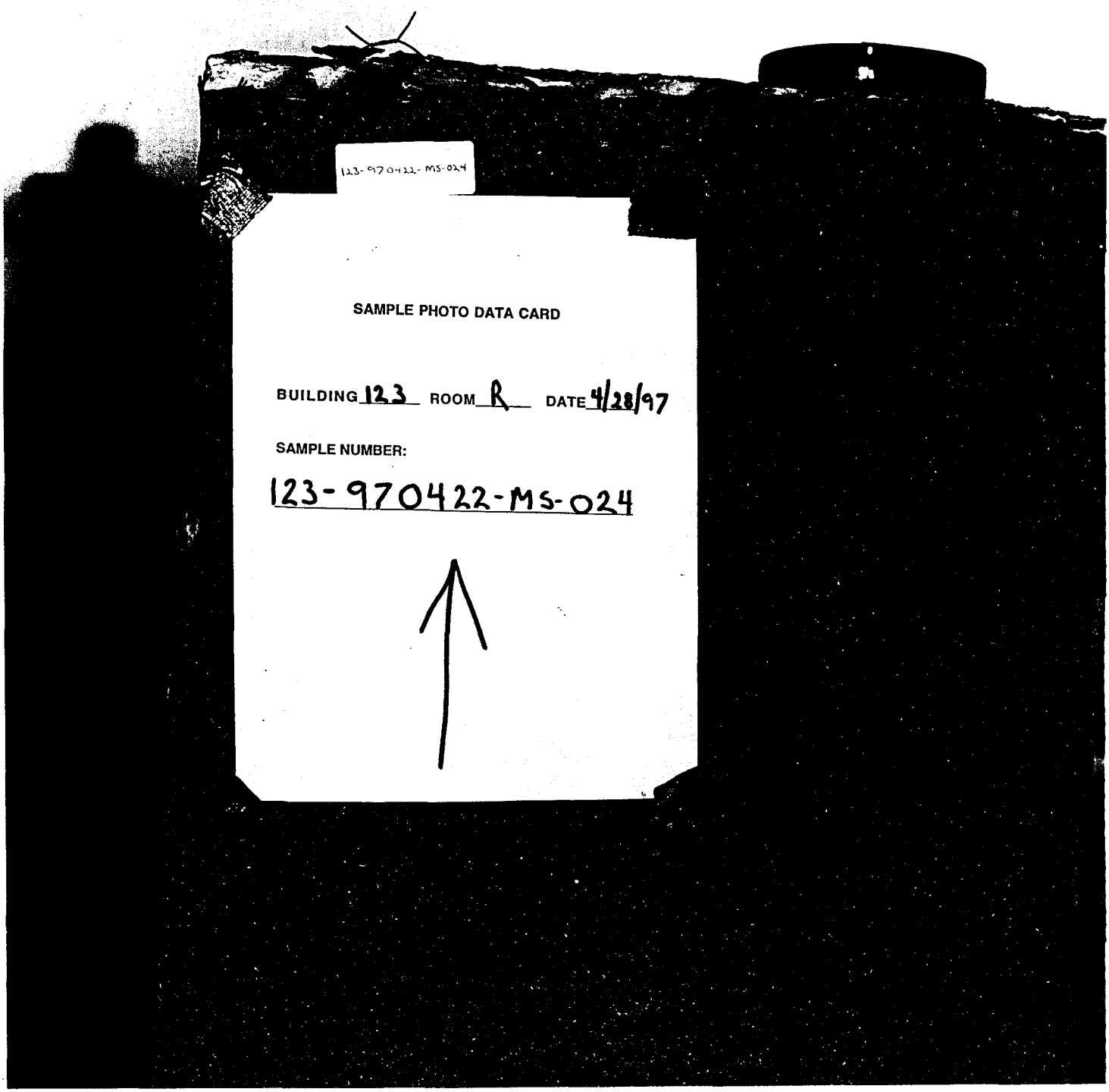
BUILDING 123 ROOM R DATE 4/28/97
SAMPLE NUMBER:
123-970422-MS-023


123-970422-MS-024
SAMPLE PHOTO DATA CARD
BUILDING 123 ROOM R DATE 4/28/97
SAMPLE NUMBER:
123-970422-MS-024

APPENDIX E

NVLAP LAB NO. 1896

ASBESTOS - TEM, PCM, PLM, SEM
METALS - AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

AIHA LAB I.D. 10768

RESERVOIRS ENVIRONMENTAL
SERVICES, INC.

1827 GRANT STREET DENVER, COLORADO 80203 (800) 678-7374 (303) 830-1986 FAX (303) 863-9196

April 14, 1997

Ms. Virgene Idecker
Kaiser-Hill Company, LLC
Rocky Flats Environmental Tech. Site
PO Box 464, Bldg. 850
Golden, CO 80402-0464

RE: RES Job No. 42526-1 - 97J1518 - Bulk Samples: T630M-970408-MS-001, 123-970408-MS-001, 123-970408-MS-002, 123-970408-MS-003, 123-970408-MS-004, 123-970408-MS-005, 123-970408-MS-006, 123-970408-MS-007, 123-970408-MS-008, 123-970408-MS-009, 123-970408-MS-010, 123-970408-MS-011, 123-970409-MS-012, 123-970409-MS-013, 123-970409-MS-014, 123-970409-MS-015, 123-970409-MS-016, 123-970409-MS-017, 123-970409-MS-018 and 123-970409-MS-019.

Dear Ms. Idecker:

Reservoirs Environmental Services, Inc. (RES, Inc.) has analyzed twenty bulk material samples by Polarized Light Microscopy (PLM) for asbestos content as per your request. The samples were received on April 11, 1997, and initial results were telephoned to your office within 24 hours of receipt. PLM was used to analyze the bulk materials in compliance with guidelines established by the USEPA (EPA/600/R-93/116). The Analytical Results are presented in Table I.

RES, Inc. has assigned job number RES 42526-1 to this study. This report is considered highly confidential and the sole property of Kaiser-Hill Company, LLC. RES, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. Samples will be disposed of after sixty days unless longer storage is requested. The US EPA guideline was developed for use on friable building materials and recommends the use of additional analyses for non-friable materials such as floor tiles. RES, Inc. recommends additional analyses to confirm negative PLM results on floor tiles. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government.

If you should have any questions about this report, please feel free to call me at 830-1986.

Sincerely,

Jeanne Spencer Orr
Vice President

RKD/pda

Analyst(s):
Paul D. Lo Scalzo
Paul F. Knappe
Greg Behnfeldt

NVLAP LAB NO. 1696

ASBESTOS - TEM, PCM, PLM, SEM
METALS - AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

AIHA LAB I.D. 10768

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

1827 GRANT STREET DENVER, COLORADO 80203 (800) 678-7374 (303) 830-1986 FAX (303) 863-9196

April 25, 1997

Ms. Virgene Idecker
Kaiser-Hill Company, LLC
Rocky Flats Environmental Tech. Site
PO Box 464, Bldg. 850
Golden, CO 80402-0464

RE: RES Job No. 42762-1 - 97J1580 - Bulk Samples: 123-970422-MS-020, 123-970422-MS-021, 123-970422-MS-022, 123-970422-MS-023 and 123-970422-MS-024.

Dear Ms. Idecker:

Reservoirs Environmental Services, Inc. (RES, Inc.) has analyzed five bulk material samples by Polarized Light Microscopy (PLM) for asbestos content as per your request. The samples were received on April 23, 1997, and initial results were telephoned to your office within 24 hours of receipt. PLM was used to analyze the bulk materials in compliance with guidelines established by the USEPA (EPA/600/R-93/116). The Analytical Results are presented in Table I.

RES, Inc. has assigned job number RES 42762-1 to this study. This report is considered highly confidential and the sole property of Kaiser-Hill Company, LLC. RES, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. Samples will be disposed of after sixty days unless longer storage is requested. The US EPA guideline was developed for use on friable building materials and recommends the use of

If you should have any questions about this report, please feel free to call me at 830-1986.

Sincerely,

Jeanne Spencer Orr
Vice President

RKD/pda

Paul D. Lo Scalzo

Analyst(s):
Paul D. Lo Scalzo
Paul F. Knappe
Greg Behnfeldt

RFP F 3791.32 (7/95)
Formerly RF-47530

Rocky Flats Environmental Technology Site

Golden, CO 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

42524

Name of Originator: M Schluterbusch Title: Asbestos Inspector Bldg/Ext: T130 G #13/4215 Date: 4/9/97 Page 1 of 2

ADMIN AREAS SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A (B)	Personal Area Bulk REMARKS	Lab Number
T690M-970408-MS-001	Asbestos				✓	Archive for P.C.	
123-970408-MS-001					✓		
-002					✓		
-003					✓		
-004					✓		
-005					✓		
-006					✓		
-007					✓		
-008					✓		
-009					✓		
-010					✓		
-011					✓		
123-970409-MS-002					✓		
-013					✓		
-014					✓		
-015					✓		

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
M Schluterbusch	[signature]	1145 4/9/97	[signature]	J Christman	0930 4/11/97
J Christman	[signature]	1435 4/11/97	[signature]	[signature]	1540 4/11/97

Report and Billing Instruction		Analysis Request	Seal# (Release #) 97J 1518
Kaiser-Hill ☐	Verbal To: Mike @ 4215	Industrial Hygiene Sample: ☐ Standard Service ☐ Rush ☐ Other___	Condition of Seal: ☐ Broken ☐ Unbroken
RMRS ☒	Fax To: Tonya Sangeline 966-4641		Signature:
SSOC ☐	Report To: Kaiser Hill	Asbestos Samples: ☐ Standard Service ☒ 24 Rush ☐ 2 Rush ☐ Other___	Comments:
DynCorp ☐	Bill To: Kaiser Hill		
WSI ☐	P.O.#/Release: 235886		
	Lab: Reservoir		

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791.32 (7/95)
Formerly RF-47530

Rocky Flats Environmental Technology Site

Golden, CO 80402-0464

42524

Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: M Schluterbusch Title: Asbestos Inspector Bldg/Ext: T130B/4215 Date: 4/9/97 Page 1 of 2

ADMIN RECS SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	PA (B)	Personal Area Bulk	REMARKS	Lab Number
123-970409-MS-016	Asbestos				✓		Archive for P.C.	
-017	"				✓		"	
-018	"				✓		"	
-019	"				✓		"	

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
M Schluterbusch	J Sawyer	1415 4/9/97		H Christman	0930 4/11/97
H Christman		1430 4/11/97		Lora Lorde	1540 4/11/97
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

- Kaiser-Hill ☐
- RMRS ☒
- SSOC ☐
- DynCorp ☐
- WSI ☐

Verbal To: Mike @ 4215
Fax To: 966-4641
Report To: Kaiser Hill
Bill To: Kaiser Hill
P.O.#/Release: 235886
Lab: Reservoir

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☒ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #) 97J 1518

Condition of Seal: ☐ Broken ☐ Unbroken

Signature:
Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791.32 (7/95)
Formerly RF-47530

427162

Rocky Flats Environmental Technology Site

Golden, CO 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

EM2434-75

Name of Originator: M Schluterbusch Title: Inspector Bldg/Ext: T130B x4215 Date: 4/22/97 Page 1 of 1

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
123-970422-MS-020	Asbestos				✓	Archive for P.C.		
-021					✓			
-022					✓			
-023					✓			
-024					✓			

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
M Schluterbusch	T. Sangaline	0900 4-23	~~M.D. Schuckengast~~		
T. Sangaline	M.D. Schuckengast	0901 4-23	M.D. Schuckengast	[illegible]	0850 4/23/97
[illegible]	[illegible]	1430 4/23/97	[illegible]	[illegible]	1500 4/23/97
				[illegible]	15:15 4/23/97

Seal# (Release #) 97J 1580

Condition of Seal: ☐ Broken ☐ Unbroken

Signature:

Comments:

Report and Billing Instruction

Kaiser-Hill ☐
RMRS ☒
SSOC ☐
DynCorp ☐
WSI ☐

Verbal To: T.T Sangaline
Fax To: 966-3029
Report To: Kaiser-Hill
Bill To: Kaiser Hill
P.O.#/Release: 235886
Lab: Reservoirs

Analysis Request

Industrial Hygiene Sample: ☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples: ☐ Standard Service ☒ 24 Rush ☐ 2 Rush ☐ Other

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 42526-1
Client: Kaiser-Hill Company, LLC
Client Project: 97J1518
Date Samples Received: April 11, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOLL	TALC	Non-Fibrous Components (%)
T690M-970408-MS-001	EM 284318	A	Pink fibrous material	15		ND	0	90	0	0	0	0	10
		B	White fibrous woven material	20		ND	0	100	0	0	0	0	0
		C	White resin	65		ND	0	0	0	0	0	0	100
123-970408-MS-001	EM 284319	A	Tan paint	10		ND	TR	0	0	0	TR	0	100
		B	Blue/gray resinous material w/ white fibrous woven material	90		ND	0	0	20	0	0	0	80
123-970408-MS-002	EM 284320	A	Tan paint	100		ND	TR	0	0	0	5	0	95
123-970408-MS-003	EM 284321	A	White fibrous woven material	2		ND	0	100	0	0	0	0	0
		B	White resinous material w/tan paint	98		ND	TR	0	0	0	10	0	90
123-970408-MS-004	EM 284322	A	Tan paint	3		ND	0	0	0	0	2	0	98
		B	Gray granular plaster	97		ND	0	0	0	0	0	0	100
123-970408-MS-005	EM 284323	A	White fibrous woven material	2		ND	0	100	0	0	0	0	0
		B	Tan paint	5		ND	0	0	0	0	2	0	98
		C	White resin	93		ND	0	TR	0	0	5	0	95
123-970408-MS-006	EM 284324	A	White fibrous woven material w/silver foil	5		ND	0	90	0	0	0	0	10
		B	Tan paint	10		ND	0	0	0	0	2	0	98
		C	White resin	85		ND	0	0	0	0	10	0	90

ND = None Detected
TR = Trace
CELL = Cellulose
Mat = Material
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PFK

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 42526-1
Client: Kaiser-Hill Company, LLC
Client Project: 97J1518
Date Samples Received: April 11, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	ASBESTOS CONTENT BY LAYER Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	Non-Fibrous Components (%)
123-970408-MS-007	EM 284325	A	Tan paint	100		ND	0	0	0	0	1	0	99
123-970408-MS-008	EM 284326	A	Multicolored paint	3		ND	0	0	0	0	0	0	100
		B	Brown fibrous material	4		ND	98	0	0	0	0	0	2
		C	White plaster (mud)	10	Chrysotile	3	0	0	0	0	0	0	97
		D	White plaster	83		ND	2	3	0	0	0	0	95
123-970408-MS-009	EM 284327	A	Brown fibrous material	3		ND	96	0	0	0	0	0	4
		B	Multicolored paint	5		ND	0	0	0	0	0	0	100
		C	White plaster (mud)	20	Chrysotile	3	0	0	0	0	0	0	97
		D	White plaster	72		ND	2	3	0	0	0	0	95
123-970408-MS-010	EM 284328	A	White plaster (mud)	4		ND	0	0	0	0	0	0	100
		B	Brown fibrous material	5		ND	98	0	0	0	0	0	2
		C	Multicolored paint	5		ND	0	0	0	0	0	0	100
		D	White plaster	86		ND	3	0	0	0	0	0	97
123-970408-MS-011	EM 284329	A	Tan paint	2		ND	0	0	0	0	0	0	100
		B	White fibrous woven material	2		ND	0	100	0	0	0	0	0
		C	Brown fibrous material	5		ND	95	0	0	0	0	0	5
		D	White plaster (mud)	15		ND	0	0	0	0	0	0	100
		E	White plaster	76		ND	0	3	0	0	0	0	97
123-970409-MS-012	EM 284330	A	Yellow fibrous material	30		ND	0	90	0	0	0	0	10
		B	White resin	70		ND	TR	10	0	0	0	0	90

ND = None Detected
TR = Trace
CELL = Cellulose
Mat = Material
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 42526-1
Client: Kaiser-Hill Company, LLC
Client Project: 97J1518
Date Samples Received: April 11, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	Non-Fibrous Components (%)
123-970409-MS-013	EM 284331	A	White/tan paint	10		ND	0	0	0	0	0	0	100
		B	White plaster	15		ND	0	0	0	0	0	0	100
		C	Tan granular plaster	75		ND	TR	0	0	0	0	0	100
123-970409-MS-014	EM 284332	A	White plaster	15		ND	0	0	0	0	0	0	100
		B	Tan granular plaster	85		ND	TR	0	0	1	0	0	99
123-970409-MS-015	EM 284333	A	Multicolored paint	8		ND	0	0	0	0	0	0	100
		B	White fibrous plaster	92	Chrysotile	20	0	0	0	0	0	0	80
123-970409-MS-016	EM 284334	A	White paint	3		ND	0	0	0	0	0	0	100
		B	Brown fibrous material	10		ND	97	0	0	0	0	0	3
		C	White plaster (mud)	20	Chrysotile	3	TR	0	0	0	0	0	97
		D	White plaster	67		ND	3	4	0	0	0	0	93
123-970409-MS-017	EM 284335	A	Multicolored paint	3		ND	0	0	0	0	0	0	100
		B	Brown fibrous material	4		ND	97	0	0	0	0	0	3
		C	White plaster (mud) w/white fibrous woven material	6		ND	0	5	0	0	0	0	95
		D	White plaster	87		ND	1	8	0	0	0	0	91
123-970409-MS-018	EM 284336	A	White paint	3		ND	0	0	0	0	0	0	100
		B	White plaster (mud)	10		ND	0	0	0	0	0	0	100
		C	Brown fibrous material	10		ND	97	0	0	0	0	0	3
		D	White plaster	77		ND	3	0	0	0	0	0	97

ND = None Detected
TR = Trace
CELL = Cellulose
Mat = Material
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 42526-1
Client: Kaiser-Hill Company, LLC
Client Project: 97J1518
Date Samples Received: April 11, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	Non-Fibrous Components (%)
123-970409-MS-019	EM 284337	A	Tan paint	4		ND	0	0	0	0	0	0	100
		B	Brown fibrous material	10		ND	97	0	0	0	0	0	3
		C	White plaster	86		ND	4	0	0	0	0	0	96

ND = None Detected
TR = Trace
CELL = Cellulose
Mat = Material
ORG = Organic
Tram-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Date QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 42762-1**
Client: **Kaiser-Hill Company, LLC**
Client Project: **97J1580**
Date Samples Received: **April 23, 1997**
Analysis Type: **PLM Short Report, Bulk**
Turnaround: **24 Hour**

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
123-970422-MS-020	EM 285651	A	Black tar w/black fibrous tar & trace silver paint	30		ND	0	25	TR	0	0	0	0	75
		B	Tan fibrous perlitic material	70		ND	50	0	0	0	0	0	0	50
123-970422-MS-021	EM 285652	A	Black tar	5		ND	5	0	0	0	0	0	0	95
		B	Tan fibrous perlitic material	95		ND	50	0	0	0	0	0	0	50
123-970422-MS-022	EM 285653	A	Black tar w/black fibrous tar & trace silver paint	10		ND	5	20	TR	0	0	0	0	75
		B	Tan fibrous perlitic material	90		ND	50	0	0	0	0	0	0	50
123-970422-MS-023	EM 285654	A	Gray fibrous resinous material	10		ND	0	0	70	0	0	0	0	30
		B	Tan wood	20		ND	97	0	0	0	0	0	0	3
		C	Black resinous material	30		ND	0	0	0	0	0	0	0	100
		D	Gray/red resinous material	40		ND	0	0	0	0	0	0	0	100
123-970422-MS-024	EM 285655	A	Black/gray fibrous tar	15	Chrysotile	40	0	0	0	0	0	0	0	60
		B	Yellow fibrous material	85		ND	0	85	0	0	0	0	0	15

ND = None Detected
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ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
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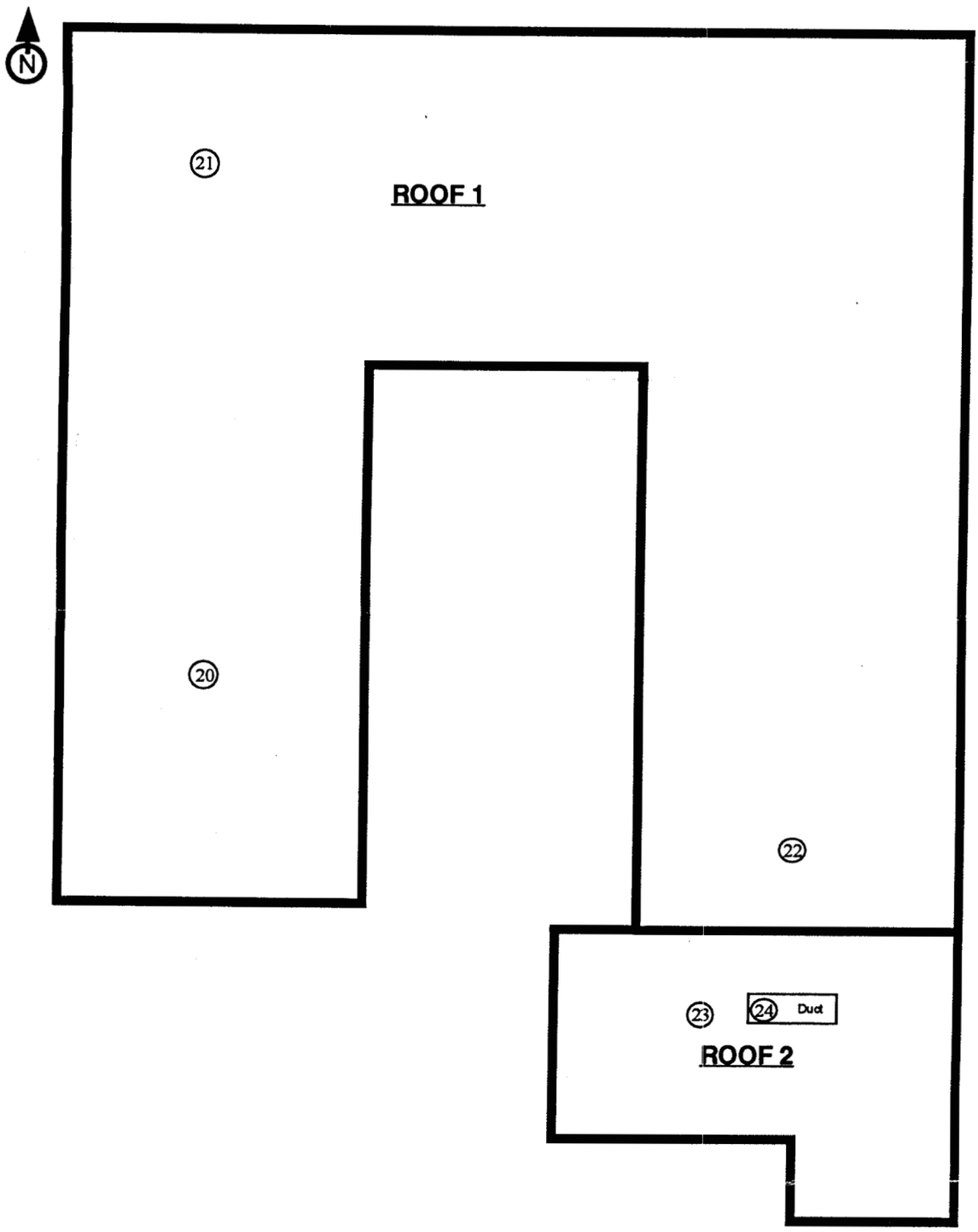
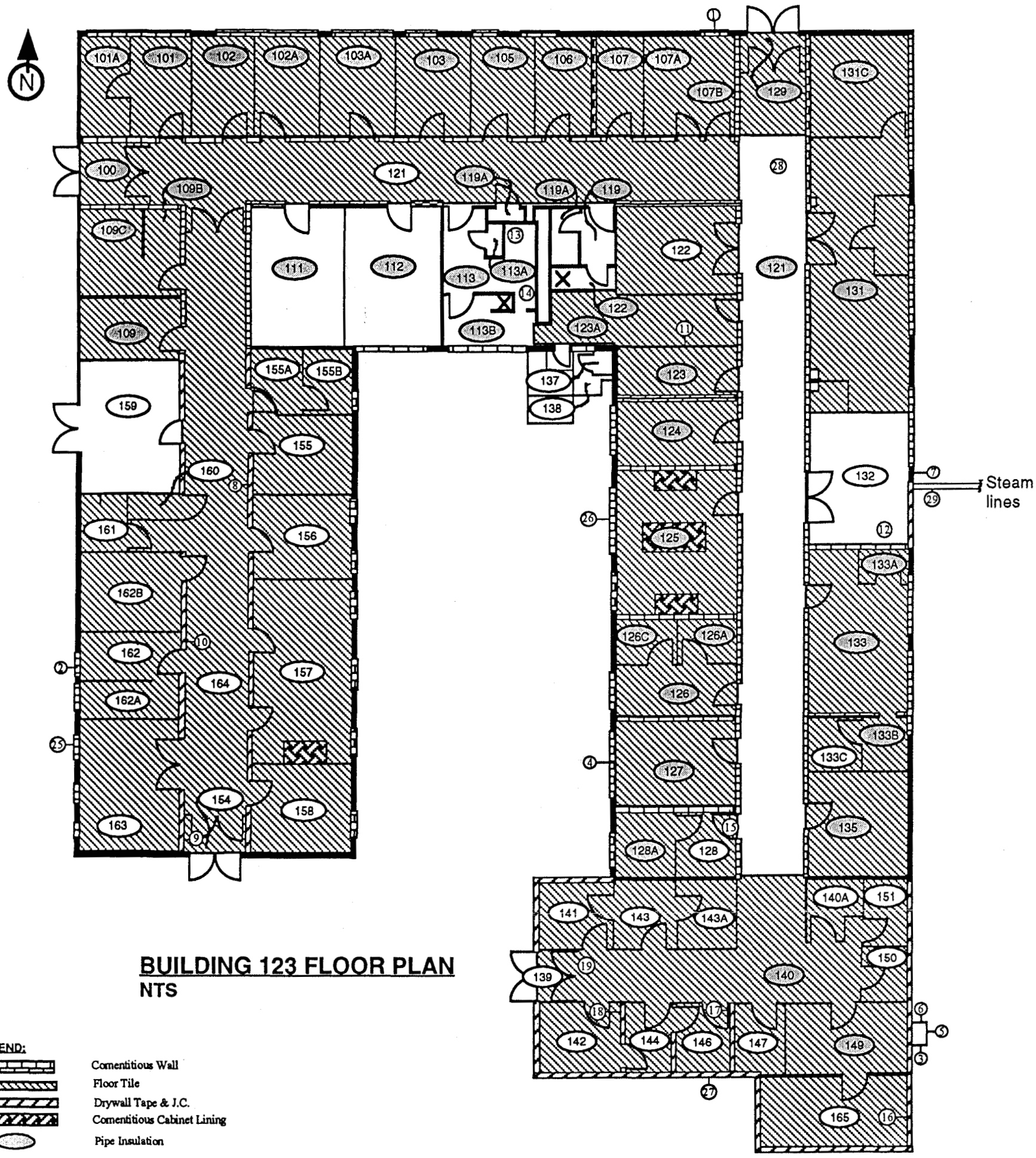
Analyst: PDL

Data QA



BUILDING 123 ROOF PLAN
NTS



BUILDING 123 FLOOR PLAN
NTS

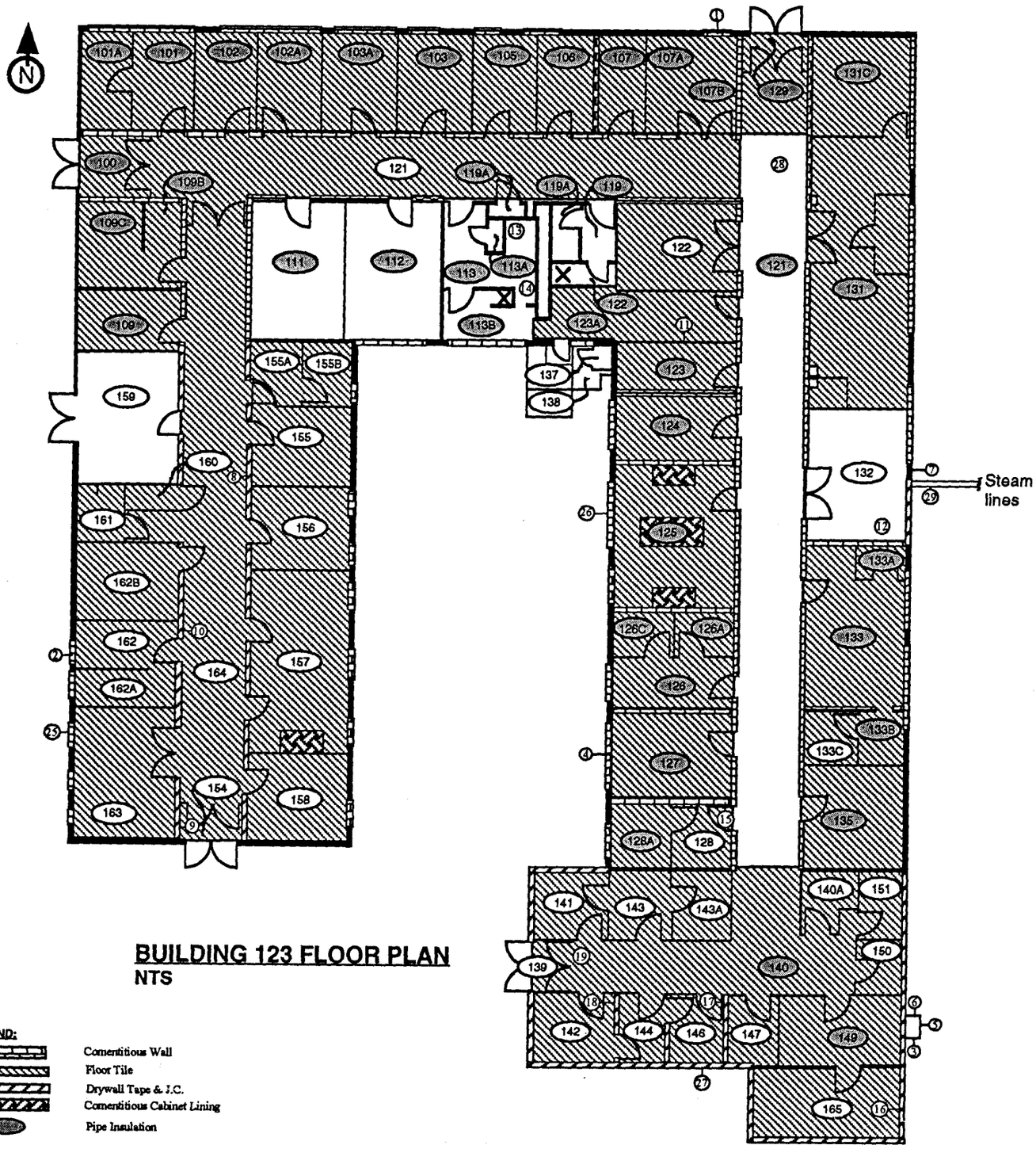
LEGEND:

- Cementitious Wall
- Floor Tile
- Drywall Tape & J.C.
- Cementitious Cabinet Lining
- Pipe Insulation

BULK SAMPLE DATA TABLE

Item No.	Sample No.	Sample Description and Location	Lab Result PLM (PC)
1	123-970408-MS-001	Exterior surfacing, texture, rough beige	ND
2	123-970408-MS-002	Exterior surfacing, texture, rough beige	ND
3	123-970408-MS-003	Exterior surfacing, texture, rough beige	ND
4	123-970408-MS-004	Exterior surfacing, texture, rough beige	ND
5	123-970408-MS-005	Exterior surfacing, texture, rough beige	ND
6	123-970408-MS-006	Exterior surfacing, texture, rough beige	ND
7	123-970408-MS-007	Exterior surfacing, texture, rough beige	ND
8	123-970408-MS-008	Drywall, tape, and Joint compound	C: (1.5%)
9	123-970408-MS-009	Drywall, tape, and Joint compound	C: (0.5%)
10	123-970408-MS-010	Drywall, tape, and Joint compound	ND
11	123-970408-MS-011	Drywall, tape, and Joint compound	ND
12	123-970408-MS-012	TSI vapor barrier mastic	ND
13	123-970408-MS-013	Ceiling plaster with rough texture	ND
14	123-970408-MS-014	Ceiling plaster with rough texture	ND
15	123-970408-MS-015	Wall board, 2' x 7' panel with narrow metal joints	B: 20%
16	123-970408-MS-016	Drywall, tape, and joint compound	C: (2.3%)
17	123-970408-MS-017	Drywall, tape, and joint compound	ND
18	123-970408-MS-018	Drywall, tape, and joint compound	ND
19	123-970408-MS-019	Wall board with 1" metal joints	ND
20	123-970422-MS-020	Built up roofing	ND
21	123-970422-MS-021	Built up roofing	ND
22	123-970422-MS-022	Built up roofing	ND
23	123-970422-MS-023	Built up roofing	ND
24	123-970422-MS-024	Insulation on duct on roof, black paper	A: 40%
25	123-970507-MS-025	Window frame putty	B: (1.25%)
26	123-970507-MS-026	Window frame putty	B: (1.5%)
27	123-970507-MS-027	Window frame putty	ND
28	123-970602-MS-028	White block insulation in pipe hanger saddles	ND
29	123-970606-MS-029	White block pipe insulation	A: 40%

Note: ND means None Detected; TR means Trace; PLM means Polarized Light Microscopy; PC means Point Count.



BUILDING 123 FLOOR PLAN
NTS

LEGEND:

- Cementitious Wall
- Floor Tile
- Drywall Tape & J.C.
- Cementitious Cabinet Lining
- Pipe Insulation

BULK SAMPLE DATA TABLE

Item No.	Sample No.	Sample Description and Location	Lab Result PLM (PC)
1	123-970408-MS-001	Exterior surfacing, texture, rough beige	ND
2	123-970408-MS-002	Exterior surfacing, texture, rough beige	ND
3	123-970408-MS-003	Exterior surfacing, texture, rough beige	ND
4	123-970408-MS-004	Exterior surfacing, texture, rough beige	ND
5	123-970408-MS-005	Exterior surfacing, texture, rough beige	ND
6	123-970408-MS-006	Exterior surfacing, texture, rough beige	ND
7	123-970408-MS-007	Exterior surfacing, texture, rough beige	ND
8	123-970408-MS-008	Drywall, tape, and Joint compound	C: (1.5%)
9	123-970408-MS-009	Drywall, tape, and Joint compound	C: (0.5%)
10	123-970408-MS-010	Drywall, tape, and Joint compound	ND
11	123-970408-MS-011	Drywall, tape, and Joint compound	ND
12	123-970408-MS-012	TSI vapor barrier mastic	ND
13	123-970408-MS-013	Ceiling plaster with rough texture	ND
14	123-970408-MS-014	Ceiling plaster with rough texture	ND
15	123-970408-MS-015	Wall board, 2' x 7' panel with narrow metal joints	B: 20%
16	123-970408-MS-016	Drywall, tape, and joint compound	C: (2.3%)
17	123-970408-MS-017	Drywall, tape, and joint compound	ND
18	123-970408-MS-018	Drywall, tape, and joint compound	ND
19	123-970408-MS-019	Wall board with 1" metal joints	ND
20	123-970422-MS-020	Built up roofing	ND
21	123-970422-MS-021	Built up roofing	ND
22	123-970422-MS-022	Built up roofing	ND
23	123-970422-MS-023	Built up roofing	ND
24	123-970422-MS-024	Insulation on duct on roof, black paper	A: 40%
25	123-970507-MS-025	Window frame putty	B: (1.25%)
26	123-970507-MS-026	Window frame putty	B: (1.5%)
27	123-970507-MS-027	Window frame putty	ND
28	123-970602-MS-028	White block insulation in pipe hanger saddles	ND
29	123-970606-MS-029	White block pipe insulation	A: 40%

Note: ND means None Detected; TR means Trace; PLM means Polarized Light Microscopy; PC means Point Count.